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Educational News and Editorial Comment

SECRETARY WILBUR AT ATLANTIC CITY

One of the most notable addresses at the recent meeting of the Department of Superintendence of the National Education Association was that delivered by Secretary Ray Lyman Wilbur. Extracts from this address as published in the *New York Times* are as follows:

Looking back fifty years before looking ahead gives one a sense of shock as to what may be before us. We have but started to follow the guiding star of science. Our natural abilities have not changed materially, but they have captured for us a mass of information and a great series of methods, which have given us new powers and a greater range of action than man has ever known before. The limits of the universe are set by the barriers of the mind of man. We advance as we break these barriers with new ideas and new facts.

Much of education has been to groove into the brain of the child the fixed thinking of the day. We should rather seek for training which will mature and season but which will keep plastic the mental processes of youth and young manhood and womanhood. Our advance through science is at so fast a rate that our political, social, and economic mechanisms are straining and breaking. Our country is witnessing its incapacity to settle many major problems by sheer political procedure. The rule by majority vote has no place in science nor in many of the applications of science to democracy. We are seeking and groping

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to find the experts whom we can safely follow through the maze of our civilization.

Certainly such experts are needed, and educators must detect and train them. Since we are human, to us the developed personality of man must ever be more important than machine efficiency. Education must not crystallize. The trouble has been that those who build an educational machine hate to change it.

As an example, when I entered the position of a young university president, those who had watched their machine operate for twenty years looked with horror upon any suggested changes.

Nature will bring senility soon enough. We have got to do what we can to prevent pre-senility through the educational procedures we adopt. We must not let children continue to be educated in grooves through which the old currents of thought, and those alone, are trained to flow, for education must change with new ideas, new developments of science, new people. If it does not, then democracy gets out of touch with science.

The greatest task of the educator is to harmonize democracy and science. You can legislate your heads off, but you can't change the laws of a single thing in science, not even a drop of water. A state legislature once drew up a bill describing in detail the symptoms a cow shows if she is tubercular. The difficulty was in getting the idea over to the cow, let alone making the tubercular bacillus understand it.

There are many zones in which democracy cannot successfully operate without scientific experts, and we are so large in the mass that, if we make mistakes, they are very big mistakes. Our political machine is grinding and groaning in its task of trying to solve these scientific problems, and, unless it secures this expert leadership, it may go down with a crash.

WHAT TAXPAYERS WANT

A recent issue of the *Los Angeles Educational Research Bulletin* contains an article by the secretary of the Educational Commission of the California Taxpayers' Association, N. Bradford Trenham, which sets forth the program of scientific study and administration of school systems favored by the California Taxpayers' Association. Sections of this article which are of general interest are as follows:

The ability of the people to support government is just as limited as is their ability to support private activities. If we represented the total social income by a straight line, a certain portion of it would be the part which society can afford to spend to achieve desired ends through government. That portion, again, would have many subdivisions. One of these parts would be the proportion to be expended for public education, and that again, in turn, would be subdivided to show what we can afford to spend for the different functions,

levels, and kinds of education. We need to bear in mind, constantly, the relationship between educational expenditures and total expenditures and be mindful of the limitations.

These limits may not be as well known as the limits of the various parts of an individual's budget, but it is just as necessary to determine them and to respect them, else the social machine will get out of order, and the total dividend of human welfare will be lessened by unbalanced allocations of funds. The question of marginal utility, which frequently means so little to the college student when he is studying it, is one of the basic principles which govern in public life as well as in private life. Applied to education, it simply means that added increments of expenditure must show a return commensurate with the added cost. Idealists have frequently lost sight of this basic economic concept and have striven to persuade educators and school-board members to throw more and more fuel on the fire without knowing whether or not the added heat and power were proportional, whether they were necessary, and whether the social coal bin was so depleted that the other fires were endangered. Some things may be desirable but impractical. We might all like to have Rolls-Royces, but we have to be content with Fords in order that we may eat and have shelter as well as ride. Let us constantly bear in mind the immutable laws of marginal utility and apply them just as vigorously to the use of public funds as to our own. . . . .

The experimental attitude in education can be carried to very dangerous extremes, to such limits, in fact, that some have the suspicion that too few teachers are teaching, that many teachers are spending most of their time and efforts experimenting, whether or not they may be qualified. Some cogs in the educational machine must mesh effectively in order that the machine may grind out its grist. Not all are qualified to be research engineers, and, even if they were, the great majority should spend most of their time in applying the research to others. It is high time that some educational techniques were found, agreed upon, and applied vigorously. It is futile to measure the success of classroom teachers by the amount of experimenting they do and the new fads and fancies they try rather than by the success they attain in guiding children over roads that someone else has laid out. . . . .

As I see it, the major problem of the state department of education is to determine the educational needs of the day. Before we know how we are going to teach or what we are going to teach, we must know why we should teach, how much we can afford to spend, and what we hope to achieve. These problems must be worked out in the light of the best thinking of our leaders—and all of our leaders are not educators. It is a mistake to think that educational philosophy should be left entirely in the hands of professional educational philosophers. Hence a lay board of education is infinitely more valuable than a professional board, for it should bring to the council table the best philosophic, economic, and political thought of the people.

The state needs to know, at least roughly, what proportion of the popu-

lation is to be steered toward the various goals. It should set up standards of intelligence and achievement for entering most of the major life-pursuits, and it should adhere rigorously to its standards when once set up. It should have the moral courage and the intestinal fortitude to deny admission to certain paths when the applicants are known to lack the necessary equipment. We need, further, to minimize residual occupations as far as possible.

The state, as the larger group, should be primarily interested in research concerning teachers, for teachers are transient, and their influence for good or for bad has wide geographical as well as psychological limits. We need more information concerning the kinds of teachers required and the training necessary to provide that type of teacher which has been decided is necessary to fill each niche. We need to know more about conditions with which it is necessary to surround the teaching profession to secure the greatest results. We must have more facts concerning the remuneration of teachers, concerning their tenure of office, concerning their continued growth, concerning their retirement with honor, concerning the value of supervision and teacher guidance. Despite the plea of so many that it can't be done, educational researchers must continue their search for some satisfactory method of evaluating the services of teachers. If we would have the best minds in education, their opportunities for advancement must not be narrowly restricted by the abilities of the mediocre. In private industry we have many devices, and constant improvement is being made. We have piece work, production scales, and other scientific methods, which largely take the place of seniority and the lock step. After all, the production of a teacher is the most important item in that person's success, and it is no credit to educational research to say that this can never be measured. It can be measured; it must be measured; and it will be measured.

The next problem is that of the size of administrative units. Our tradition in California has been to establish a school district wherever a half-dozen families happen to congregate and to set up an institution known as a school, which has frequently resulted in a type of education that has cheated children and robbed taxpayers. In this year of grace we Californians still find ourselves with some eighteen hundred one-teacher schools and with costs and results out of all relation to each other. The state of California showed some interest in this problem when its legislature made a $50,000 appropriation last spring to study the problem, but up to date no commission has been appointed by the governor, and it looks very much as though inertia would thwart progress for years to come.

The state should also determine the best types of administrative set-ups. It should study boards of education from the points of view of size, number of members, relationship to professional officers, and similar aspects. It should also provide us with a better knowledge of how to train and secure competent superintendents of schools. It might even keep a list of rated superintendents of schools so that the best men might be placed in the hardest jobs. Similar

work is necessary with the business activities of the schools. We should have more information on buildings, supplies, and mechanical operations.

On the next problem, that of the analysis of the population, the state and federal governments should co-operate. We should have information concerning retardation, juvenile delinquency, handicapped people, illiteracy, and the needs for vocational education. All of these problems should be attacked, with proper understanding of marginal utility and with opposition to the diversion of disproportionate amounts of school funds to minor problems. For instance, it is conceivable that it might cost more to wipe out illiteracy than it is worth. Personally, I do not think it would cost more, but I raise this question as one that administrators should have in mind and in order to reiterate the demand that marginal utility be the ever present yardstick by which new ventures are judged.

THE ST. LOUIS SITUATION

The following letter has been received by the editors of the *Elementary School Journal.*

March 12, 1930

Editor, Elementary School Journal
University of Chicago, Chicago, Illinois

DEAR SIR: I have read most carefully the article in your last issue pertaining to the St. Louis situation; and, as chairman of the committee of the Board of Education appointed to consider the qualifications of available candidates wherever they might be found, I wish to state that your article as a whole is so written that it may cause some people not intimately acquainted with the St. Louis situation to form opinions which are not in accordance with the facts.

Furthermore, at least one statement is untrue. On page 405 of the February issue of your journal you state: "At a recent meeting the committee asked the board for its discharge without a report on the ground that only a local candidate should be considered for the superintendency." This statement is false, and I request you to retract it and to give just as wide publicity to this retraction as you gave to the original article.

As evidence that the above statement is false, I refer you to the official proceedings of the Board of Education for December 27, 1929. Pages of the proceedings pertaining to the matter in question are inclosed.

As evidence that men outside of St. Louis were considered, I refer you to . . . . superintendent of schools . . . . whose expenses we paid when he came to St. Louis for an interview.

Very sincerely yours,

[*Signed*] DAVID C. TODD
Member, Board of Education

The letter is published in full except for the name and address of the superintendent whose expenses were paid to St. Louis. Appar-

ently this superintendent did not know before he went to St. Louis that conditions were such as are indicated in the following extract from the proceedings of the Board of Education for December 27, 1929, to which Mr. Todd refers in his letter.

REPORT OF SPECIAL COMMITTEE APPOINTED TO SEEK CANDIDATES FOR THE OFFICE OF SUPERINTENDENT OF INSTRUCTION

A partial report of the activities of the special committee appointed to seek candidates for the office of superintendent of instruction was made, orally, by Mr. Todd, chairman of said committee, in executive session, at the regular meeting of the Board on December 10, 1929, and the matter was laid over for consideration at the January meeting of the Board, or earlier, at a special meeting, if the Committee desired to submit a report.

The following statements were made by members of the Committee.

MR. TODD, Chairman:

"Mr. President, and members of the Board: As chairman of the committee appointed to seek candidates for the office of superintendent of instruction, I have been authorized to make the following statement, and ask the support of the Board therein:

"In view of the fact that certain things have been published; in view of the fact that certain things have been said, certain statements made; and also in view of the fact that a canvass of the members of the Board of Education has been made and that the evidence is that there is a decision made by an overwhelming majority in one direction; and further, in view of the fact that the Committee has not had time to complete the type of program it had anticipated —the Committee respectfully requests that, as soon as it is able to finish the correspondence necessary with those with whom it has communicated on the outside, the Committee pass automatically out of existence, and that we be excused from making a specific report or recommendation to the Board of Education on this subject."

A NEW SERIES OF STUDIES ISSUED BY THE RESEARCH DIVISION OF THE NATIONAL EDUCATION ASSOCIATION

The Research Division of the National Education Association is issuing a new series of studies entitled "Studies in State Educational Administration." The first of these deals with school legislation passed in 1929; the second, with school revenues and new methods of taxation; and the third, with group insurance for teachers. The series makes a large amount of valuable information available to school superintendents and teachers. The last of the three studies is perhaps of the most general interest. The following extract from this study shows the general character of the publications.

Groups of teachers and others studying the available forms of insurance have pointed out the rapid growth within recent years of group insurance. The following quotation has been included to show the extent of its development.

"Approximately seventeen thousand employers of labor in the United States and Canada have set up programs whereby their employees are provided with group life insurance in amounts ranging all the way from $500 to $10,000 per life. It will be noted that, of the more than ninety billions of dollars of life insurance carried by American and Canadian companies, about one-twelfth is group life. About 75 per cent of this aggregate amount of life insurance is in force in some half-dozen life-insurance companies. Year by year the amount of this kind of insurance in force has steadily increased, ranging from about thirteen millions of dollars in 1912 to not far from six billions in 1927 and estimated at more than seven billion five hundred million dollars at the end of 1928."

Various writers on insurance have stated the advantages and disadvantages of the forms of protection available through insurance concerns. In addition to the general considerations which apply to all forms of insurance, whether purchased on an individual or group basis, there are certain special considerations which may apply to group insurance. It should be noted here that group policies written by the different insurance companies, while similar in many essentials, vary in certain administrative, financial, or other aspects. The discussion which follows is based upon the general run of practice rather than upon any particular plan or policy in effect. Among the advantages of group insurance, according to its advocates, are:

1. It is to the advantage of a school system to encourage teachers to protect themselves adequately through a group plan of insurance, as such protection tends toward longer tenure and better service.

2. All members of the group are eligible without medical examination.

3. Upon withdrawal, the teacher has the privilege of converting his policy under the group-insurance plan to ordinary forms of insurance, for an equal or less amount, without medical examination.

4. Group insurance reduces the overhead expense by making the holder of the master policy responsible for the collection of premiums and administration of the plan. In consequence, the individual member pays a lower rate than he would be obliged to pay if he purchased insurance individually.

5. Any differences of opinion concerning adjustment of claims are settled as between the teachers (acting as a group) and the insuring company.

6. Special medical services (for instance, accident or health services) are sometimes provided by the insurance companies to groups of persons who have secured group life or group accident and health insurance.

7. Group insurance with a reliable company has sufficient resources behind the policy to guarantee payment of benefits even in case of local catastrophe or epidemic.

On the other hand, it has been claimed that a group life-insurance plan pre-

sents some disadvantages that should be brought to the attention of persons interested in this form of protection. The following are sometimes mentioned.

1. Under some forms of group life insurance the insurance company reserves the right to cancel the master policy. For instance, the master policy may be canceled if the number of teachers participating falls below a stated percentage. Practice on this point varies, however.

2. Experience seems to show that it is difficult to interest younger teachers in a plan of group insurance. The younger teachers might possibly be able to purchase individual policies at a lower cost to themselves than they would if purchasing insurance as members of a group consisting in part of a number of older persons.

3. Under some contracts a retiring teacher must give up his group insurance. He has, however, the privilege of converting to a regular policy, for an equal or less amount, at the rate in effect for his age at the time.

4. The ratio of benefit return to premium outgo, although larger than in the case of individual policies, is yet below 100 per cent on account of overhead and profits.

SUMMER LECTURES ON THE LEAGUE OF NATIONS

The following statement has been issued by the League of Nations Association, Inc.

Amid the tremendous array of summer schools and special courses with which the American interested in international affairs is now confronted, one stands out as unique in conception, execution, and interest. This is the Geneva Institute of International Relations. It was designed primarily to meet the needs of the large number of English-speaking tourists who visit Geneva during the summer months to see something at first hand of the working of the League of Nations.

During those months, when the secretariat of the League is very busy preparing for the annual assembly meeting in September, the student is likely to carry away a most confused picture of the activities of this international organization. He may have seen or heard something of the work on disarmament, mandates, minorities, the opium problem, or codification of international law, but he has been unable to see the wood because of the number and variety of the trees which compose it.

It was essentially to meet this need that the Geneva Institute of International Relations was founded. In spite of its impressive title, the Institute is a very simple and informal affair. Those who wish to learn what it is all about at Geneva have only to register their names for a single week of lectures.

These lectures, given either by prominent members of the secretariat of the League or by world-famous students of international problems, follow a program which has been carefully drafted to give a clear picture of the workings of the League as a whole. Each lecture is a unit in itself, but each fits into the others

to form part of a general course. The plan of the lecture program may roughly be compared with that of the League itself, where different parts of the mechanism handle different problems in an almost autonomous manner but where no one part can operate successfully independent of the whole machine.

By permission of the secretariat, the lectures are held in the League's Council Chamber, the same famous Glass Room where Sir Austen Chamberlain, the late Dr. Stresemann, Aristide Briand, Viscount Adatci, Ramsay MacDonald, and countless other figures familiar to the newspaper readers of the world have held their deliberations.

The sessions of the Geneva Institute of International Relations this summer will be held from July 27 to August 1, inclusive. A tentative list of lecturers includes the following: William Rappard, S. de Madariaga, E. J. Phelan, J. E. Brierly, Louis Rajchman, F. G. Boudreau, W. Arnold Forster, Lord Robert Cecil, Henri Rolin, A. W. Manning, Gilbert Murray, André Siegfried, W. T. Layton, Sir Arthur Salter, P. Stoppani, J. M. Keynes, Erik Colban, Philip Kerr, Harold J. Laski, Frederick Lugard, and Alfred Zimmern.

Full details of this year's program can be obtained from the League of Nations Association, Inc., 6 East 39th Street, New York City; from its American Committee in Geneva, 4 rue de Monthoux, Geneva, Switzerland; or from the League of Nations Union, 15 Grosvenor Crescent, London, S.W. 1., England.

USEFUL PUBLICATIONS ISSUED BY THE GOVERNMENT PRINTING OFFICE

The Government Printing Office has issued the following announcements.

Copies of *The Origin and Evolution of the United States Flag*, illustrated, printed as House Document 258 of the 69th Congress, are now available in this office at 25 cents per copy.

Mr. R. C. Ballard Thruston, the author, in this interesting and instructive pamphlet, traces the history of the design of our flag through the cross of St. Andrew, the cross of St. George, the flag of Great Britain, and the various colonial flags as finally merged into the standard immortalized by Francis Scott Key.

Remittance should be made by check or postal money order, payable to the Superintendent of Documents, Government Printing Office, Washington, D.C. Do not send stamps.

State Law Index: An Index and Digest to the Legislation of the States of the United States Enacted during the Biennium 1925–1926 is now available in the Office of the Superintendent of Documents, price $1.50 per copy, buckram bound.

For a description, we quote from the Preface of the book:

"The index and digest to state legislation authorized by the act of Congress approved February 10, 1927, fills a long-felt want. The present volume is the

first of a series, which it is planned to continue with a volume for each biennium, and covers only the general, permanent law enacted during the period.

"The index is planned with the idea of classing all laws having the same objective under one heading rather than under the term used in each state. Its purpose is to serve the needs of the student of comparative state law. It cannot take the place of the indexes in the individual states, where the quest is for the specific details of the laws of a given state."

Remittance should be made payable to the Superintendent of Documents. Postage stamps and foreign money are not acceptable; currency may be sent at sender's risk. Foreign remittances should be made either by international money order or by draft on an American bank.

MADAME MONTESSORI AND AMERICAN IMITATORS

The Associated Press is authority for the following statement.

The United States has angered Dr. Maria Montessori, the world-known educator. She has returned to Italy under the patronage of Mussolini to carry her theory of individual education into practice in the high schools.

Until recently Dr. Montessori said she was pleased with the United States. Educators had accepted her method. There were ten thousand Montessori teachers in America.

"But now," she said, "people who were formerly my assistants and lieutenants are using my method in whole or in part and putting their own names or other names to it. They have taken my ideas and are making profitable use of them without giving me or the Montessori method credit.

"But what can I do? My method is not patented. They are legally free to do as they like."

In consequence of what she regards as a betrayal, Dr. Montessori will not return to the United States for another two years. Then, if she does go to America, she will have something new to offer—perfected individual education along the Montessori lines applied to high schools and perhaps to colleges.

This complaint will not affect American educators profoundly. It is quite certain that in this country any educational practice which is widely adopted will be made over by those who use it. The originator of an idea is usually willing to see the idea enlarged upon by others. There is no established church in this country, and there is no Mussolini to give his approval or disapproval to experiments in education. With Americans the Gary system becomes through modification the platoon plan, and no one thinks that there is plagiarism in modifying the plan and renaming it. The Dalton Plan is evolved into the contract system. Dr. Burk's plan of individual instruction, sometimes known as the San Francisco plan, becomes

in the hands of Dr. Burk's pupil, Superintendent Washburne, the Winnetka plan. It is American freedom to innovate which leads to this breach of Old World etiquette. Americans will have to suffer patiently during the two years of Madame Montessori's voluntary absence from this country. When she is prepared to lift the embargo and deliver her new plans, she will be welcomed even as America has from the first welcomed all who have contributions to make to a composite civilization. Madame Montessori ought to understand, however, that whatever she brings in the way of ideas will suffer or benefit as the case may be from modification, adaptation, and even rechristening.

OCCUPATION FOR RETIRED TEACHERS

The following statement is quoted from the *New York Sun*.

Teachers who retire from service because they have reached the legal age limit of seventy years would have opportunities for further employment by the Board of Education under a bill now before the Legislature. The measure, introduced by Assemblyman Mandelbaum and Senator Downing, appears to have the backing of local school officials. No one in authority here, however, cared to comment on it.

The bill amends the section of the education law which created the position of superintendent of schools emeritus and provides, in effect, that, subject to the consent of the Board of Estimate, the Board of Education may employ retired teachers "to conduct such investigations and make such reports as it may deem necessary." The compensation is to be fixed by the Board of Education and is in no way to affect the size of the teacher's pension.

The assignment is to be for no more than three months at a time. There is nothing in the bill, however, to prevent the reassignment of the same individual for more than one three-month period.

The text of the bill follows in part.

"Subject to the approval of the Board of Estimate and Apportionment or like financial authority, the Board of Education . . . . may designate any retired teacher who has served in the schools of such city for thirty-five years and was retired because he had reached the age of seventy years to conduct such investigations and make such reports as it may deem necessary. Such designations shall be in writing and shall be filed with the Board of Estimate and Apportionment. The period for which a designation shall continue in force shall be specified therein and shall not be longer than three months."

It is generally believed that this bill was introduced at the request of the city educational authorities. This is taken as an indication that the Board of Education is planning to begin a survey of retardation in which it expects to use one or more retired teachers or supervisors.

CONSOLIDATION OF SCHOOLS AND TRANSPORTATION OF PUPILS

The following statement is quoted from the *United States Daily*.

The forty-eight states are spending more than $40,000,000 annually for the transportation of pupils to public schools, the associate specialist in school finance, United States Office of Education, Timon Covert, stated orally February 10.

In 1928, the most recent period for which a report has been compiled, 1,250,574 pupils in thirty-six states were afforded transportation facilities as compared with 1,111,553 in 1926, Mr. Covert pointed out.

During the two-year period, it was explained, the states have increased expenditures over $5,000,000 for this additional educational service. The total cost in 1926 for forty-five states amounted to $35,604,971.

Mr. Covert said that Indiana ranks first among the states, with an outlay in 1928 of $4,246,395 for this purpose. Ohio at the same time spent $3,777,886, and Iowa $2,089,726.

Over a dozen states spend annually over a million dollars each, Mr. Covert said, for transporting pupils to school. Transportation, he stated, is largely confined to the rural areas.

A statistical study of over half of the states discloses that horse-drawn vehicles for this purpose are steadily receding in favor of motor-propelled buses, Mr. Covert said. In 1928 there were 42,768 motor vehicles, with only 5,961 horse-drawn carriages, in over half of the states.

Connecticut has in use 9,559 motor vehicles, not including private automobiles, as compared with 5,765 used by Indiana. Ohio has 3,933 such conveyances in use; North Carolina, 3,225; and Louisiana, 2,009.

Closely associated with transporting pupils is the movement toward school consolidation, Mr. Covert explained. The consolidated school, it was further explained, in its most general terms is a school formed by the union of two or more schools in rural territory furnishing transportation.

In commenting on the consolidated schools, Mr. Covert made the following statement.

"The total number of consolidated schools reported by forty-three states is 17,004. The number for Idaho is estimated; the number for Kentucky is for the year 1925–26; the numbers for Maine and for Massachusetts are rural schools having two or more teachers; the number for New Jersey was reported for 1924–25; and the numbers for New Mexico and for South Carolina are for the year 1928–29. Data for Arkansas, Connecticut, Florida, Maryland, and Utah were not available."

A TEXTBOOK ON THE ALPHABET

For many generations before modern reform began to attack the formalisms which appeared in the school curriculum children

learned their letters as one of the first items of knowledge which they acquired in the schools. From the time of the Greeks and the Romans down to Horace Mann's demand that the A-B-C method of teaching reading be abandoned, acquaintance with the alphabet was regarded as the first essential of an education. Then came the reform. Late in the last century a large number of pupils were found in the public schools in the United States who had never learned the alphabet. These pupils had learned to read words and phrases, but they had never been required to learn the conventional order of the letters of the alphabet. When teachers became aware of this fact, there was a renewed effort to teach pupils the alphabet.

It may be that there are schools of the present day which do not teach the alphabet. It is interesting to note that enterprising schoolbook publishers—Hall & McCreary Company, Chicago—have thought it desirable to correct any deficiency in this line. They have published a textbook containing exercises on the uses of the alphabet entitled *Everyday Uses of the Alphabet.* The introductory statements to the teacher and the pupil are as follows:

To the Teacher

When one stops to think of it, it is surprising the many and varied uses we make of the alphabet every day outside of the field of reading. As indicated in the message to the pupil on the next page, we make use of our knowledge of the alphabet every time we use a dictionary, an encyclopedia, a telephone directory, or any of the many other books of reference that we use in school. Besides these, there are letter files and many kinds of indexes that are used in the business and professional world. There are indexes to time tables, cookbooks, books of poetry, catalogues, and information files of various kinds, all of which are arranged in alphabetical order, so that it is necessary to have a thorough knowledge of the sequence of the letters of the alphabet and of the general plan on which indexing and filing are done. Because of the many everyday uses that are made of the alphabet for these purposes, the facts given in this book are of such importance that they ought to be learned by every student before he leaves school.

To the Pupil

It is the purpose of this book to help you learn those interesting and useful facts about the alphabet and its uses that will prove helpful to you in looking up words in the dictionary, subjects in encyclopedias and other books, and titles and names in library and similar indexes. At home it will help you find quickly names in the telephone directory. In high-school and college work an

exact knowledge of alphabetical arrangements will be especially valuable in helping you find readily the many things you will be required to look up in books of reference. If, after you leave school, you go into any sort of business, you will find this knowledge very useful, because there is hardly any kind of business or profession that does not make considerable use of alphabetical arrangements. You, therefore, will find it much to your advantage to learn thoroughly the facts presented in each of the lessons in this book.

DIFFICULTIES IN INTRODUCING DEPARTMENTAL TEACHING

In a recent issue of *School Topics*, the official magazine of the public schools of Cleveland, Ohio, H. M. Buckley, assistant superintendent of schools, discusses as follows the difficulties in the way of the introduction of departmental teaching in the elementary school:

The second semester of last year, 1928–29, the teachers of Grades III, IV, V, and VI in one of the elementary schools decided to try an experiment with the departmental organization.

In this experiment the home-room teacher taught history, language, spelling, and arithmetic to her home-room group and one special subject to four other groups of pupils. Class periods were forty minutes. At the close of the semester, the teachers and pupils gave their reactions by filling in questionnaires.

Every teacher voted against departmentalization. Of the pupils, 249, or 75 per cent, voted for the plan, and 81 against it. In the room of the strongest teacher, 90 per cent of the pupils voted against the plan. Where the weakest teachers were, the pupils voted almost 100 per cent for the plan.

On considering the subject of departmentalization in Grades I–VI, it cannot be too strongly emphasized that practically all of our teachers have been trained for, and have had their experience in, the traditional school. Had the same teachers been trained to some extent as specialists and had their experience been in a special line, the vote for departmentalization would doubtless have been almost as high as it would be in the junior and senior high schools today.

Some of us can remember when five to eight subjects were taught in the high school by a single teacher. Some of us have taken examinations in as many as twelve subjects in order to secure a high-school certificate. A candidate who professed to be able to teach more than three high-school subjects today would not receive consideration; yet the elementary teacher does not hesitate to try twelve or fifteen subjects.

When we realize that the 107 principals and nearly all of the 2,400 teachers in the elementary schools of Cleveland have trained and taught as general practitioners, it is expecting the impossible to hope that they can adapt them-

selves to the departmental plan overnight and immediately become specialists. In fact, it is doubtful whether the teachers below the lower quartile can specialize.

The fundamental difficulty in the way of departmentalizing in the elementary schools is the lack of teachers with the ability and specialized training to cause them to be outstanding in any given line. If we had twenty-five teachers highly qualified in elementary science to place in as many schools, the work in this subject would inevitably center about them. So long as we continue to train teachers as general practitioners, to that extent we delay the program for departmental work in the lower grades. Furthermore, the higher salaries and the greater prestige for teaching in the junior and senior high schools have drawn from the elementary grades those with the ability and training to do outstanding work in a special line.

It cannot be too strongly urged that a teacher with mediocre ability can do an average piece of work in fourteen subjects more easily than she can do an outstanding piece of work in one subject. In fact, the lower 50 per cent of our teachers are probably incapable of doing work of a high order in a single subject. The weak teacher cannot specialize; her weakness would show up instantly.

It has been argued that "the personal touch," "the mothering," the personal responsibility of a teacher for her grade or group, outweighs the advantages of specialization. Were this argument well founded, the logical conclusion would be to keep all children at home, where the personality factor is at its peak. Pupils cannot learn nothing; neither can teachers teach nothing. The best learning takes place under the stimulus of something interesting and worth while. There is no substitute for something worth learning.

The "mothering" ideal will cheat the children of the kindergarten and first three grades out of talent and skill longer than in Grades IV–VI. The weaker the teacher, the more prone she is to impose herself upon the little child. Talent brought to bear on the kindergarten and first three grades will pay larger dividends in pupil development and interests than in any other equal period. The little child can adapt himself almost instantly to personalities that have something to offer.

We must hasten to make it impossible for a helpless child to be compelled by law to be for a full day every day in the school year under the pall of mediocrity, not to mention inferiority.

THE ALL-YEAR SCHOOL IN ALIQUIPPA, PENNSYLVANIA

H. R. VANDERSLICE
Superintendent of Schools, Aliquippa, Pennsylvania

There are three basic reasons for the development of the all-year school in Aliquippa, Pennsylvania: first, the pressing need for school buildings in a town in which the school enrolment grew from 2,292 in 1919–20 to 6,611 in 1928–29; second, a desire on the part of the school board to secure greater utilization of the school plant, the erection cost of which was $1,530,000 and the ultimate cost of which, under the method of funding employed, will be nearly double that amount; third, the feeling of the school board that in congested centers there are many children who should have opportunity for schooling during all periods of the year.

A primary purpose of the board in adopting the all-year program was to provide, through a wider use of the school plant, opportunity for schooling for the increasing number of children who apply for admission. In considering ways in which the available school buildings might be used to take care of the increasing number of pupils, the board definitely decided against any plan of double sessions.

The time which children spend in school is a comparatively small part of the time at their disposal. When a child sleeps nine hours, he has fifteen hours each day for other purposes. In the higher grades in Aliquippa, when single sessions have been held, he has attended school six hours daily. If a pupil could maintain perfect attendance under this schedule, he would be in school for 1,080 hours a year, or 19.8 per cent of his waking hours. When the schools have been operated on double sessions, the child has been in school for four hours daily. This program has provided 720 hours, or 13.2 per cent of the child's waking hours, for school work. Such an arrangement means a serious impairment of the school program, not to speak of the hours of leisure added to the lives of the children, who in congested centers often have more unemployed time than

they can fill wholesomely. The all-year school as organized in Aliquippa does not curtail the number of hours in school during the year for any of the pupils. In many cases children are allowed to attend school during the four quarters of the year. Later, it is hoped to extend the privilege of attending during the four quarters to all whose needs will apparently be served by such attendance.

The all-year plan now in operation in Aliquippa utilizes the school buildings for forty-eight weeks in the year. It provides all children with schooling for nine months each year (180 days). Except during the first year, all children have had the opportunity to attend school for 180 consecutive school days. The program adopted has reduced the need for new school buildings. It secures greater utilization of the plant and, at the same time, eliminates the necessity for part-time attendance. The objective of the board to provide opportunity for children to attend school all year has been partly realized. Each school year many pupils have been given the privilege of attending during the four quarters.

The main characteristic of the Aliquippa plan is the distribution of the school enrolment so that three-fourths of the children are in school and one-fourth are on vacation during each quarter of the year. At the beginning it was thought necessary to assign children arbitrarily to school and vacation periods. When the first three all-year schools opened on July 23, 1928, there were 1,976 pupils enrolled in school and 674 on vacation in the three schools. During the first year the number of children in these three schools who were on vacation averaged 662 per quarter. As approximately one-fourth of the children are kept on vacation during each quarter, it is possible to provide school accommodations without congestion for $33\frac{1}{3}$ per cent more pupils than are provided for under the ordinary plan of having a school session of nine months. From the beginning the privilege of attending during the four quarters has been given to pupils who request it when the size of the sections permits and when the needs of the pupils seem to justify the request.

The program was organized and fully announced in the newspapers and in letters to parents several months before the all-year schools opened. It was explained in meetings of the parent-teacher associations and before the service clubs and was given local pub-

licity in every possible way. When the assignment of quarters was made, the parents of each child were sent a second letter stating that, if the assigned periods interfered with the vacation of the family, the school would either make a transfer or take other steps to minimize interference with the family's plans. When the junior-senior high school began the all-year schedule on July 22, 1929, attendance during the first quarter was made optional, and a satisfactory number of pupils enrolled for that quarter.

In order to scatter the requests for vacation privileges, the dates of the school quarters were arranged so that each quarter begins near the middle of one of the four seasons and ends near the middle of the next season. During the first year, the first quarter extended from July 23 to October 15; the second, from October 16 to January 21; the third, from January 22 to April 17; and the fourth, from April 18 to July 12. This arrangement placed the first quarter in summer and autumn; the second, in autumn and winter; etc. Furthermore, one week's vacation for everybody was placed in the middle of July between quarters. The arrangement also placed the close of the second quarter at approximately the same time as the close of the first semester in schools with sessions of nine months. In addition to the general vacation of one week in July, three weeks of vacation was distributed throughout the year at the time of school holidays at Easter, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas.

There are now five schools in Aliquippa on the all-year schedule. One of them is the largest school in the borough, the junior-senior high school, which enrols 2,010 pupils. Plans are now being made to place all the schools on the all-year schedule at the opening of the quarter beginning October 15, 1930. The total enrolment in all the schools at that time will be approximately 7,200.

By instituting the all-year plan, the Aliquippa school district eliminated the necessity of adopting part-time attendance or of carrying out the only alternative, building additions to the school plant, and opened the schools to a considerable number of children all year. If additions sufficient to house all the pupils for the regular thirty-six weeks in the year had been made to the three schools beginning the all-year program in 1928, eighteen extra rooms would

have been required. At the usual rate of expense in this district, these eighteen rooms would have cost $180,000.

The savings on other items were considerable. The board has estimated that the total savings accruing through the operation of the three schools during the first year amounted to $15,523.43, as shown in Table I. The estimated saving in instructional service is accounted for by the saving made in teaching children who fail to be promoted, as they remain in the repeated grades for twelve weeks

TABLE I

ESTIMATED SAVINGS EFFECTED THROUGH THE OPERATION OF THREE SCHOOLS DURING FORTY-EIGHT WEEKS IN THE YEAR JULY, 1928, TO July, 1929

Department	Amount of Saving
General control	$ 0.00
Instructional service	1,680.00
Auxiliary agencies	0.00
Operation of plant:	
Fuel	883.35
Light	90.08
Maintenance	?
Fixed charges:	
State tax on school bonds	720.00
Fire insurance	270.00
Debt service	11,880.00
Capital outlay	?
Total	$15,523.43

under the quarter plan instead of eighteen weeks as under the semester plan. An item for maintenance should be added to the estimate of savings since rooms that have not been built do not need to be kept in repair. Furthermore, it is probably fair to figure a saving under capital outlay because the length of the life of school furniture and equipment does not decrease in direct proportion to the amount of use. In other words, furniture depreciates almost as much through standing idle during the summer months as it does through constant use. Altogether, the board estimates that the establishment of the all-year school in the three original buildings with the consequent avoidance of the construction of eighteen schoolrooms has effected a saving of two-thirds of a mill on the

annual tax levy. When all the schools in the borough are placed on the all-year schedule, it is estimated that the saving will be three mills on the annual tax rate.

One of the arguments in favor of the all-year plan of school organization is that it results in a substantial saving of school funds. Since the feeling in many quarters is that public education is costing too much, there is no apparent reason why some variation of the all-year plan should not be applied on a wide scale in order that expenditures for school buildings in the future will be relatively smaller than those in the past fifteen years. Its adoption in rapidly growing centers should mean either a reduction of taxes or the liberation for other purposes of certain funds which are now used for school buildings. Either result marks an advance in school administration.

The economic benefit of the all-year plan in districts needing new school buildings is readily established. As the operation of the plan has progressed in Aliquippa, the school authorities have been impressed more and more with concomitant benefits to the pupils and the community. A very obvious advantage is that many pupils are given the privilege of attending school during the four quarters. Pupils who must repeat a grade can make up their work in twelve weeks instead of eighteen weeks as under the semester plan. This arrangement allows them to regain their former classification in school within the year—an outcome pleasing to both parents and pupil after they have been confronted with failure.

The opportunity to attend school during four quarters is an advantage to over-age children. Pupils entering the school who are one or more years over-age for their grades have an opportunity to attend school during four quarters and to do in a year the work usually accomplished in a year and one-third. Ambitious boys and girls who want to graduate early also have the opportunity to attend school during four quarters. However, care must be used in deciding the rate at which these ambitious children shall be allowed to proceed. Sometimes parents of young, bright children wish to advance them through school too rapidly. In Aliquippa a child of this type is allowed to advance by attending school during four quarters until he becomes accelerated to the extent of one year. The question is then carefully discussed with the child's parents

before he is permitted to proceed at a rate which will allow him to graduate from high school before he reaches the age of seventeen years.

Some families have found advantages in the all-year school that had not been foreseen by the school authorities. In cases where there are a number of children in a family, their school attendance is frequently arranged so that there is always one child at home to help the family. The girls help in the home, and the older boys secure jobs in industry. Incidentally, high-school boys find it much easier to secure jobs during vacation periods when only one-fourth of the boys are on vacation. In the case of younger children, the problem of unoccupied time in the home and the community is minimized by the arrangement that sets free but one-fourth of the children during any given period.

Another advantage of the all-year plan grows out of the co-operative arrangement which the public schools of Aliquippa have with industry for the benefit of boys in the industrial courses. During the school year the boys in the upper years of the industrial courses work on alternate shifts at various trades in the steel mills. Finding employment for all the boys during the summer vacation has always been difficult as industrial organizations, which must strive to keep down costs, usually cannot absorb double the number of apprentices for two or three months in the summer. The all-year school solves this problem by making it possible for boys in the co-operative courses to work on alternate shifts throughout the year.

The all-year school has made the high-school band a continuous organization. Under the old plan the band broke up in June and was reorganized in September. In the all-year school, boys in the band can receive instruction throughout the year, and, in addition, the organization is maintained so that the band is available for public concerts at the time of the year when these concerts are most appreciated by the community. The band of the Harding High School in Aliquippa gave two concerts a week on public recreation grounds throughout the summer of 1929.

Actual experience with the all-year plan is fulfilling the hopes which the school board of Aliquippa had at the time of its inauguration and is gradually fixing the opinion that the financial saving

and the other benefits accruing entirely justify the organization of the schools on an all-year basis. By this plan greater utilization of the school building is secured. If this result can be obtained without interfering with the attendance or with the health and growth of the children or with their progress through the grades, an important advance in school administration has been made. Attempts are now being made to gather reliable data on the attendance, progress, and health of the children during the succeeding quarters under the four-quarter plan.

For the first year the attendance in the all-year schools was 95.0 per cent and in the schools with sessions of nine months, 94.3 per cent. The same effort to enforce school attendance was made in both types of schools. The experience in Aliquippa is that children will attend school during any of the four quarters; in fact, many are glad to attend during all four quarters. At the beginning of each quarter there have been numerous requests from parents for the privilege of continuous attendance for their children. The school authorities have granted these requests when it was possible to do so, and they regret that the size of the sections has not allowed them to grant a larger number. Studies are now being made which will compare the yearly attendance of children starting during each quarter with the attendance of children attending during four quarters and with the attendance of children enrolled in the schools with sessions of nine months.

All the children in the elementary schools are being weighed and measured each quarter to determine, if possible, the growth trends and the effect which attending school during the different quarters has on growth. A record of the absences for all reasons is being compiled for each quarter. The number of excuses for sickness and other physical disabilities has been much smaller in the summer than in the winter. Up to the present not a single observation has been made which would justify the conclusion that either the health or the growth of the pupils is interfered with by attending school during the summer months.

One objection to the all-year school which is often heard is that it causes conflict with the vacations of the parents. This conflict seems to be greater in theory than in actual practice. One year's

experience has fixed the opinion that a much smaller number of the people in a city go away for extended vacations than is commonly supposed. A careful study of what the children in Aliquippa do during each period of vacation is now being made. Under the Aliquippa plan the problem of the family vacation is partly solved by the careful arrangement of the dates of the quarters and by the general vacation of one week in July. Obviously, other adjustments might be made to provide further for vacation plans. A possible adjustment would be to lengthen the vacation between quarters in July to two weeks. Under the present arrangement in Aliquippa the quarter beginning January 15 is well placed for those who wish to take a vacation in the South during the winter. When all the facts concerning family vacations are brought together, it will probably be found that only a small percentage of the population cannot be accommodated by careful assignments of pupils to school periods after consultation with parents, by transfers, and by vacation periods between quarters.

Another objection sometimes raised is that dividing the work of the school year into three parts results in three groups to a grade. In small schools there may then be three groups in a single classroom. Such a result is objectionable if a whole class is given mass instruction, but it is not particularly serious if the policy of the school calls for some plan of group or individual instruction. In a large school where there are three or more sections of each grade, three groups to a grade cause no more difficulty, administrative or instructional, than would two under the semester plan. A problem that always requires consideration is the equalization of the groups. The enrolment in the groups must be maintained at the maximum during all quarters in order to realize the greatest economy. One method of equalizing sections in Aliquippa is the admission of beginners in each quarter. Admitting children to the first grade on four dates distributes the children fairly evenly into sections at the time of entrance and is, therefore, a step toward equalization. In Aliquippa four dates for admission and four dates for promotion have been definitely provided, and, as soon as necessary, four dates for graduation will be arranged. A minor advantage will be a tendency to simplify commencement exercises, to remove much of the

artificiality that has often attended the formal commencement. When commencements occur four times a year, they become simply closing exercises.

Another objection to the all-year school which is frequently mentioned is that children are required to attend school in the hot weather of summer. One answer to this objection is that most of our cities have summer schools for a number of weeks during the summer vacation. Figures published by the United States Office of Education show that 438,419 children attended summer schools in cities with populations of 10,000 or more during the summer of 1927.[1] Most of these children attended school for five or six weeks. The children in Aliquippa attend school during hot weather but little longer than do children who attend summer sessions of six weeks. Another answer is that the school buildings are usually the coolest places in the city as they are equipped with fans and their size makes a circulation of air comparatively easy. Data with regard to temperatures are now being gathered which will indicate how the temperatures in all schoolrooms compare with those in several other places in the city. Portable schools are impractical during the summer as temperatures are always higher in the portable buildings than in the rooms in the large buildings. One result of the all-year program in Aliquippa will be the early abandonment of portable buildings.

Many of the questions asked about the all-year school have to do with the teaching staff. The number of teachers is decreased under the Aliquippa plan, as is well illustrated in School J. Before the adoption of the all-year plan there were thirty-two teachers in the school, sixteen on part time and sixteen on full time. After the adoption of the new schedule eight teachers were dismissed. Twenty-four teachers working twelve months are equivalent in teacher-months to thirty-two teachers working nine months.

No definite policy has yet been decided on with regard to permitting teachers to teach during four quarters through successive years. This question has so far been left to the option of the teachers, some teaching four quarters and some preferring to work for only nine months. There are teachers now in the system who are

[1] *Statistics of City School Systems, 1927–1928*, pp. 65–78. Office of Education Bulletin No. 34, 1929.

teaching their sixth successive quarter with no apparent ill effects. Many teachers, particularly married men, who find that all-year employment removes the embarrassment of being without salary during the long summer vacation, wanted to be placed on the all-year schedule. The monthly salaries of the teachers have been adjusted only slightly in consideration of the longer teaching year. The annual income of the teachers who work during four quarters is approximately 28 per cent higher than that of those who work for nine months. A teacher who had been earning $1,800 for nine months was given a contract at $2,300 for four quarters; one who had received $2,250 for nine months received $2,900 when engaged for four quarters.

The school board of Aliquippa has provided that, in case of sickness, death in the family, or other unavoidable cause, teachers may have one day's leave with pay for every thirty-six teaching days and that these days of leave, when not used, may accumulate from year to year. The superintendent has discussed with the board the desirability of granting sabbatical leave when teachers have accumulated a total of thirty unused days. The proposal is to grant a leave of absence of sixty teaching days with full pay when a teacher's unused leave aggregates thirty days. If this provision is added to the rules of the board, an occasional quarter's leave with pay for rest, study, or travel will be provided for the teachers. Those whose attendance is perfect will earn a quarter's leave every four and one-half years. Teachers who are not able to accumulate thirty days' leave with pay will be allowed to drop out for a quarter any time without pay. If it should seem desirable, they may be paid to the extent of their accumulated leave.

No careful study of the teachers' opinions of the all-year plan has yet been made, but no protest against the plan has been heard. Several teachers in the schools with sessions of nine months have applied for positions in the all-year schools, and more applications from teachers outside the district were received during the past year than ever before. Just what effect the all-year program may have had on the number of candidates is not apparent. It seems clear, however, that the all-year plan has not lessened the desire of teachers to work in this school system.

THE KINDERGARTEN AND THE LIBRARY

NORMA C. LINDEMAN
Mt. Auburn Training School Kindergarten, Cleveland, Ohio

The children who attend the Mt. Auburn Training School Kindergarten, Cleveland, Ohio, come from homes where there are very few books and where the amount of reading done is very meager. The parents are busy and rarely read anything other than the newspapers in the small amount of time available for recreation. Many of the parents can neither read nor write English. Few of the adults have library cards, and they rarely use the libraries in the neighborhood. A few of the children come to the school with an interest in reading and a familiarity with books, but in most cases interest must be aroused by the school. An important duty of the school, then, is to have books in the kindergarten for the children to use. As the children come into contact with books on their first day of school, it may be said that the library work commences as early as that.

PROCEDURE

In the kindergarten room there is a table called the library table, where the children can always find books. The table is never crowded with other material, so that the children have ample space for looking at picture books. The children learn how to handle books, how to hold them, and how to turn the pages. They also learn to close a book when they have finished looking at it and to return it to the proper place on the table. They quickly learn to keep the table in order, to keep it free from other types of material, to arrange the books according to size, and to care for the standards, book ends, and display pictures. There is also a book cupboard, where the children can find more books. Some of the books used belong to the kindergarten, but the majority are borrowed from the library, selections being made by the librarian and the teacher. Books from the library are kept for a period of two weeks. They are then returned, and more are brought in.

The children are helped to become familiar with the school library. They learn its location just as they learn the locations of the other parts of the building. Early in the term groups of children are taken into the library in order that they may see just what it is like and become acquainted with the librarian and her assistants. During this first visit the children are given time to look at picture books. The librarian sits down with the group and encourages the right handling of the books. The children make frequent visits to the library, and each time they become more familiar with its requirements; for example, that they must be quiet in order not to disturb others. They also learn how books are charged, and they are given an opportunity to charge some books, which they take back to the kindergarten. Thus they learn that most of the books in the kindergarten are borrowed from the library.

Since the books are changed before the children tire of them, the interest in picture books remains active. The library table is popular, and never a day passes that a group of children does not look at some of the books. While sitting at the table, they converse freely about the books, asking others—often the teacher—to look at the pictures which have attracted them. A teacher often sits at the table looking at the books with the children and encouraging them to talk about the pictures. The teacher sometimes finds that she can add a bit of information and thus make a picture more meaningful for the children. They recognize books containing stories that they know, such as "The Three Billy Goats" and "Three Little Pigs," and often they ask the teacher to read the stories to them at the table. It is interesting to observe the children's natural reactions to the books and how much they get from the pictures when left to themselves.

Frequently the use of the picture books is checked during the discussion periods, when the children are asked to tell about the books at which they are looking. A child brings his book over to the group so that all may see the picture while he tells about it. The conversation encourages thoughtful and intelligent study of pictures and discourages mere handling of books.

The library is used for reference work in such cases as the following.

1. A child did not know how many legs to put on a turtle which she was modeling from clay. She was sent to the library for pictures of turtles. One picture which she brought back showed only the two front legs, while another showed two legs on the side. The children figured out that a turtle has four legs.

2. Another child was making a freehand cut-out poster of a circus and decided to put in a seal. She was not certain just how a seal looks and asked the teacher to help her with it. She was sent to the library for a picture of a seal, and, with the help of the picture, she cut out a very good seal. She herself was so delighted with it that she wanted to take her work back to the library to show the results. When the children have received help from the library, they are always encouraged to show their work to the librarian, who makes sympathetic comments.

3. Several boys decided to make a lighthouse and asked whether they might go to the library for pictures to help them.

4. In the discussions, stories, or in general conversation a new object is often mentioned. A child or a group of children is then sent to the library to find out more about the object under discussion. In *The Story of Mrs. Tubbs* wasps and weasels are mentioned, and pictures and reading material about them are supplied to the children by the library.

5. An Indian project was under way in the kindergarten. Some children made costumes and were to take part in an Indian dance. In order that they might become familiar with Indian names, the children went to the library to look at pictures of Indians and to learn their names. Each chose a name which pleased him and brought back the book showing a picture of the Indian by that name. A few days later one of the children who was not in the dance contributed another Indian name, Minnehaha, which he had heard at home and which was added to the list.

An experiment is now in progress in which small groups of children are sent to the library to select books for the kindergarten. Many choice books are put at their disposal. Those that appeal to the children are charged to the kindergarten. They have reasons for the choices they make and usually explain the reasons when they bring the books to the kindergarten. One child chooses a book be-

cause of a certain picture, while another makes a certain choice because of the subject matter, for instance, a book on Indians. Another chooses a book because of an attractive cover, and still another because a book is new. The books chosen are kept in the kindergarten for a week. Each child then finds his own book and returns it to the library. A list of the names of these books is being kept in order that information may be secured about children's choice of books, their chief interests, and the number of times a particular book is chosen. It is interesting to note that the children remember why they chose particular books and usually volunteer their reasons when they return the books.

With the help of the librarian, Laura Bailey, the writer has prepared a list of books desirable for use in kindergartens, which appears at the end of this article. The Mt. Auburn Training School is fortunate in having a very good collection of books in its library, and it is interesting to experiment with certain books. The books under experiment are studied carefully in order that their possibilities may be recognized before the children use them.

At a mothers' meeting held in November the librarian spoke to the mothers about buying books for the children for Christmas. She invited the women into the library to see the attractive books there and told them which are the best editions. There is a suggested list in the kindergarten, and many mothers have copied the titles. It was also urged at the meeting that there be more reading aloud to the children at home either by the parents or by older brothers and sisters.

LIBRARY PROJECT

A project in connection with the library is worked out in the kindergarten each semester. The following account of a project carried on during the school year 1928–29 will serve as an illustration.

Frequently the children voluntarily bring pictures from newspapers and magazines. These pictures are cut out, ready to be made into books. They are not always pictures of the best type, and many times their use is discouraged. The desire to make books is met by supplying a large collection of suitable pictures and other necessary materials. After the pictures are cut and mounted, the pages are

tied together and an attractive cover is designed. In 1928–29 while the books were being made, many things in connection with books were discussed, and the suggestion was made that a library large enough for the children to enter be built to hold their books.

The long and short tables were used to build the sides, and blocks were used for the windows, shelves, and entrance. The children who helped in this work made frequent visits to the library to see how the shelves are constructed and how the distances between the shelves vary in order to accommodate books of different sizes. One child printed a sign to be placed above the door. A small table and a few chairs were placed inside.

The books which the children had made were the first to be put on the shelves. The books belonging to the kindergarten were placed in the "library," and many children brought books from home to add to the collection. It was interesting to see these books, as most of them were Christmas gifts and many were those which had been suggested by the librarian at the mothers' meeting. As the children wanted more books, the entire class went to the school library. Each child found a book on the children's shelves, had it charged, and brought it to the kindergarten to be placed on the shelf where it best fitted. A collection of mounted pictures such as the children had used in the school library was added. The problem arose of how the books should be placed on the shelves, and the children made another visit to the school library to see how the books are placed there. They saw that the backs of the books are toward the front so that the titles are easily seen. The children profited by this discovery and were able to place their books on the shelves in the proper manner.

The "library" was too small to accommodate all the children who wanted to use the books, and many had to take their books out to look at them. Without suggestion, one little girl took it upon herself to be the librarian and, without help from the teacher, played her part very well, imitating the work she had seen done by the school librarian. Children asked her for certain books, which she found for them. She also supervised the replacing of the books. One day, while she was sitting at the small table busily engaged, she was asked what she was doing. She replied, "Marking the books so that the

children will know when to bring them back." She had no pencil, but her imagination supplied the necessary materials. When asked whether she would not like to have a pencil and a pad of paper, she gladly accepted the idea and marked something in the corner of each slip, placing the slip in the pocket of the book. She was very careful not to harm or mark the book in any way. Some slips were marked with numbers and others with letters which she knew how to print, the only word being BED. The other children recognized her unusual interest and ability in the work and, in their childish way, respected her for doing it. When she was asked what she wanted to be when she grew up, she gave the expected reply, "A librarian." The benefit received by this one pupil made the whole project worth while.

This project summed up our library work for the semester. It gave the children an opportunity to use the knowledge and associations that they had gained. It was gratifying to learn that even in the lives of little children the library can play an important part.

KINDERGARTEN BOOK LIST

The books in the following list, judged to be suitable and desirable for use in the kindergarten, have been selected on the following bases: (1) the compilers' familiarity with the books, (2) the children's interest in the books as determined by the use of the books with children, and (3) the literary value of the books. Since it is important to select certain editions when books are chosen for a given purpose, the names of the publishers have been included so that books especially adapted to children of kindergarten age may be secured.

Picture Books

MOTHER GOOSE

Anderson, Anne (collector and illustrator). *Old Mother Goose Nursery Rhyme Book*. New York: Thomas Nelson & Sons.

Brooke, L. Leslie (illustrator). *A Nursery Rhyme Picture Book*. New York: Frederick Warne & Co., Ltd.

Buffum, Katharine G. *Mother Goose in Silhouettes*. Boston: Houghton Mifflin Co.

Greenaway, Kate. *Mother Goose*. New York: Frederick Warne & Co., Ltd.

Smith, Jessie Willcox (editor and illustrator). *The Little Mother Goose*. New York: Dodd, Mead & Co.

Welsh, Charles. *A Book of Nursery Rhymes.* Boston: D. C. Heath & Co.
Wright, B. F. (illustrator). *The Real Mother Goose.* Chicago: Rand McNally & Co.

NURSERY RHYMES WITH MUSIC

Le Mair, H. Willebeek. *Little Songs of Long Ago.* Philadelphia: David McKay Co.
Le Mair, H. Willebeek. *Old Dutch Nursery Rhymes.* Philadelphia: David McKay Co.
Le Mair, H. Willebeek. *Our Old Nursery Rhymes.* Philadelphia: David McKay Co.

BOOKS OF GENERAL INTEREST

Anderson, Anne (author and illustrator). *Nursery Zoo.* New York: Thomas Nelson & Sons.
Bannerman, Helen. *The Story of Little Black Sambo.* New York: Frederick A. Stokes Co.
Brooke, L. Leslie (illustrator). *Golden Goose Book.* New York: Frederick Warne & Co., Ltd.
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IMPROVING ABILITY IN SPELLING

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The purpose of this article is to report the results of an effort that was made to improve ability to spell. The work was undertaken during the school year 1928–29 by Lenna Swisher and was carried on, under the writer's direction, as a field project with fifth-grade pupils in the public schools of Bellbrook, Ohio. Twenty-five minutes each school day for a period of three months were devoted to the work.

The first step in the project consisted in a preliminary study of the spelling ability of the class by means of a test of twenty words selected from Column N of the Buckingham Extension of the Ayres Spelling Scale. The author of the scale recommends that the words for testing a particular grade be selected from a column for which the standard score is from 50 to 66 per cent in order that the words may be difficult enough to give an accurate measure of the ability to spell. For fifth-grade pupils of average ability in spelling the words should be chosen from Column S. Because of the suspected weakness of the class concerned in this project, the words were selected from Column N. However, the results of both the preliminary test and the final test show that the words chosen should have been slightly more difficult. The results of the preliminary test are presented in Table I. The grade standards are given in Table II. The scores in Table II should be interpreted as follows: 34 means from 31 through 37 per cent; 58 means from 55 through 62 per cent; etc.

An analysis of the data in Table I in the light of the grade standards shown in Table II reveals several significant facts. First, the average for the class was less than the standard for the fourth grade. Second, less than one-half of the pupils in the class reached or exceeded the standard for their grade. Third, there was marked variation in spelling ability. One pupil showed eighth-grade ability; four pupils, sixth-grade ability; two pupils, fifth-grade ability; two pupils,

fourth-grade ability; ten pupils, third-grade ability; and two pupils, less than second-grade ability.

The second step in the project consisted in discovering the words in most common use which the pupils could not spell. In order to

TABLE I

SCORES OF TWENTY-ONE FIFTH-GRADE PUPILS ON PRELIMINARY TEST IN SPELLING BASED ON COLUMN N OF THE BUCKINGHAM EXTENSION OF THE AYRES SPELLING SCALE

Pupil	Score	Pupil	Score
1	100	13	70
2	95	14	70
3	95	15	65
4	95	16	65
5	95	17	60
6	90	18	55
7	90	19	55
8	80	20	30
9	80	21	20
10	75		
11	70	Average	72.6
12	70		

TABLE II

GRADE STANDARDS FOR COLUMN N OF THE BUCKINGHAM EXTENSION OF THE AYRES SPELLING SCALE

Grade	Standard Score	Percentages Included in Standard Score
II	34	31–37
III	58	55–62
IV	79	77–81
V	88	87–90
VI	94	94–95
VII	98	98
VIII	100	100

diagnose the needs of the group and of the individual pupils, the class was tested on the 592 words in the second-grade list and the 660 words in the third-grade list in *The Jones Complete Course in Spelling*.[1] The second- and third-grade lists were used in making the in-

[1] W. Franklin Jones, *The Jones Complete Course in Spelling*, pp. 1–60. Chicago: Hall & McCreary Co., 1924.

ventory of difficult words because of the pronounced weakness of the majority of the pupils exhibited in the preliminary test. The Jones lists were used because of the scientific care with which they were constructed.

Several class periods allotted to spelling in the daily schedule were spent in discovering the difficult words. When the extensive diagnos-

TABLE III

NUMBER OF WORDS IN THE SECOND- AND THIRD-GRADE LISTS IN "THE JONES COMPLETE COURSE IN SPELLING" MISSPELLED BY TWENTY-ONE FIFTH-GRADE PUPILS

Pupil	Second-Grade List (592 Words)	Third-Grade List (660 Words)	Both Lists (1,252 Words)
1	5	1	6
2	10	0	10
3	9	1	10
4	10	20	30
5	43	50	93
6	11	2	13
7	24	12	36
8	61	29	90
9	52	44	96
10	82	73	155
11	41	15	56
12	62	48	110
13	127	52	179
14	68	33	101
15	98	63	161
16	78	124	202
17	76	111	187
18	64	35	99
19	110	94	204
20	116	131	247
21	252	161	413
Total	1,399	1,099	2,498
Average	66.6	52.3	119.0

tic test based on the Jones lists was given, each word was first pronounced and then used in a sentence. Between 100 and 150 words were given in each class period. The results are presented in Table III.

Table III reveals several significant facts. First, pupils in the fifth grade misspelled many of the words placed by Jones in the lists for the second and third grades. Second, of the words misspelled by the great majority of the twenty-one pupils, more are in the second-

grade list than in the third-grade list. This fact is especially surprising since there are sixty-eight more words in the third-grade list than in the second-grade list. Third, the pupils varied widely in their ability to spell the words most frequently found in the written vocabularies of children.

Recording the difficult words constituted the third step in the project. Each pupil made a record of the words which he had misspelled in the tests on the Jones lists. This record represented the pupil's list of spelling "demons"; it was, in fact, his individual curriculum in spelling. The teacher made a group record of the troublesome words by placing on a diagnostic chart prepared for the purpose all the words in the Jones lists that had been misspelled by any member of the class. This chart was also used later for recording the difficult parts of the troublesome words after the parts had been identified by analysis. Both the individual lists and the chart for the class served as points of departure in overcoming individual and group difficulties.

Analysis of the difficulties in spelling comprised the fourth step in the project. The analysis was made on the assumption that weaknesses in learning can be effectively and economically overcome to the extent that teachers are able to locate the points of difficulty and to focus the teaching at those points. Accordingly, the words misspelled by each pupil were critically examined, and the difficult part of each word for each pupil was charted, so that the teacher knew exactly where to focus the instruction in overcoming individual and group difficulties. Table IV shows a limited sampling of the difficulties in spelling revealed by this type of analysis.

Inspection of Table IV reveals a number of interesting facts. First, some of the commonly used words in the table were much more difficult than others for the six fifth-grade pupils represented in the table. Thus, the word "running" was misspelled by only one of the six pupils, while the word "ribbon" was misspelled by five of the six pupils. Second, the pupils manifested marked individuality in the matter of words misspelled. Pupils 15 and 17, for example, misspelled five words each; yet they misspelled only one word in common. Third, some of the words presented only one point of difficulty, as indicated by the following misspellings of the words "been" and

"Saturday": "bin," "ben," "ban"; "Saterday," "Satarday." Fourth, some words presented different points of difficulty for different pupils. Thus, the word "robin" was misspelled by Pupils 14, 15, and 19, respectively, as follows: "robbin," "robbon," and "robon."

Mastery of the difficult words revealed by the tests on the Jones lists constituted the fifth step in the project. The pupils were grouped according to their needs, and teaching and practice were administered on an individual basis. At this point the diagnostic chart proved especially helpful, not only in indicating the words which were difficult for different pupils but also in identifying the troublesome parts of the difficult words. If words were found which were

TABLE IV

POINTS OF DIFFICULTY IN COMMONLY USED WORDS MISSPELLED BY SIX FIFTH-GRADE PUPILS

Pupil	been	sled	running	kitten	wigwam	feeling	robin	ribbon	Saturday
14	.....	.....	.....	.....	.....	eel	b	on	ur
15	ee	.....	.....	k	wam	.....	bin	.....	ur
17	.....	ed	nn	.....	wam	eel	.....	on	.....
19	ee	ed	.....	.....	a	.....	i	bbo	.....
20	.....	ed	.....	k	.....	.....	i	bb	.....
21	ee	.....	.....	k	.....	eel	.....	on	ur

misspelled by a considerable number of the pupils, instruction was organized for the entire group. When only a limited number of pupils misspelled certain words, instruction was organized for the particular pupils concerned. As a rule, no pupil was included in a group organized for the study of particular words unless he had misspelled those words. There is no object in requiring pupils to go through the motions of learning something which they already know.

An attempt was made to motivate learning by calling to the pupils' attention the use which one makes of spelling in written discourse and the penalty which society attaches to misspelling. During the presentation of a word all available types of imagery were utilized. The teacher wrote the word on the blackboard and called attention to the part or parts which had proved difficult for the pupils concerned; she pronounced the word clearly and had the pupils say it distinctly; she had the pupils write the word under her direct

supervision. In their independent study of a word the pupils were encouraged to observe the following procedure.

1. Pronounce the word correctly and look closely at each syllable as you say it distinctly.
2. Close your eyes and try to recall how the word looks syllable by syllable as you pronounce it in a whisper.
3. Open your eyes to make certain that you were able to recall the correct spelling.
4. Repeat the closing and opening of your eyes as many times as you need to in order to fix the correct form of the word in your mind.
5. Write the word without looking at it just as soon as you are certain that you can recall the correct form, and then check your spelling.
6. Write the word two or three times without looking at the correct form, and check your spelling.
7. Mark the word in your list of words to be mastered if it is especially difficult for you.[1]

The pupils who were more proficient in spelling were able to master their word lists much more quickly than the weaker pupils. As soon as they could satisfy the teacher that their difficulties had been overcome, the stronger pupils helped the teacher check the work of the slower pupils by discovering the words which had been learned and those which needed further study. This plan of class administration had the advantage of adjusting the work to individual differences in spelling achievement and also provided valuable training in co-operation and in the acceptance of responsibility.

The final step in the project consisted in measuring the amount of improvement resulting from the remedial work. Two measures of improvement were obtained. First, the pupils were retested on all the words in the Jones second- and third-grade lists. Second, they were retested by means of a twenty-word test based on Column N of the Buckingham Extension of the Ayres Spelling Scale. The twenty words were different from the ones used in the preliminary test. The results are shown in Tables V and VI.

Tables V and VI show that the pupils made marked improvement in their ability to spell. Table V shows that the total number

[1] Adapted from Ernest Horn, "Principles of Method in Teaching Spelling, as Derived from Scientific Investigation," *Fourth Report of the Committee on Economy of Time in Education*, p. 72. Eighteenth Yearbook of the National Society for the Study of Education, Part II. Bloomington, Illinois: Public School Publishing Co., 1919.

of misspellings of the 1,252 words in the Jones second- and third-grade lists was reduced fom 2,498 in the initial test to 298 in the final test. The average number of misspellings was reduced from 119.0 to 14.2. Table VI shows the gain made by the pupils as measured by the initial and the final tests based on Column N of the

TABLE V

NUMBER OF WORDS MISSPELLED BY TWENTY-ONE FIFTH-GRADE PUPILS IN INITIAL AND FINAL TESTS ON THE SECOND- AND THIRD-GRADE LISTS IN "THE JONES COMPLETE COURSE IN SPELLING"

PUPIL	SECOND-GRADE LIST (592 WORDS)		THIRD-GRADE LIST (660 WORDS)		BOTH LISTS (1,252 WORDS)	
	Initial Test	Final Test	Initial Test	Final Test	Initial Test	Final Test
1	5	0	1	0	6	0
2	10	0	0	0	10	0
3	9	0	1	0	10	0
4	10	0	20	2	30	2
5	43	6	50	25	93	31
6	11	0	2	0	13	0
7	24	1	12	0	36	1
8	61	0	29	0	90	0
9	52	4	44	2	96	6
10	82	6	73	0	155	6
11	41	0	15	0	56	0
12	62	10	48	2	110	12
13	127	38	52	18	179	56
14	68	3	33	0	101	3
15	98	7	63	4	161	11
16	78	17	124	11	202	28
17	76	18	111	13	187	31
18	64	6	35	0	99	6
19	110	7	94	36	204	43
20	116	24	131	7	247	31
21	252	7	161	24	413	31
Total	1,399	154	1,099	144	2,498	298
Average	66.6	7.3	52.3	6.9	119.0	14.2

Buckingham Extension of the Ayres Spelling Scale. The average score on the preliminary test was 72.6 per cent; the average score on the final test was 92.4 per cent. Interpreted in terms of the grade standards given in Table II, these scores mean that the average of the class was raised from considerably less than fourth-grade standard to nearly sixth-grade standard.

Table VII shows that the average percentage of gain for the class as a whole was 38.2. The corresponding figures for the best ten pu-

pils and the poorest eleven pupils were 10.7 and 63.3, respectively. The difference in the average percentage of gain made by the better

TABLE VI

INTELLIGENCE QUOTIENTS OF TWENTY-ONE FIFTH-GRADE PUPILS AND THEIR SCORES ON PRELIMINARY AND FINAL TESTS BASED ON COLUMN N OF THE BUCKINGHAM EXTENSION OF THE AYRES SPELLING SCALE

Pupil	Intelligence Quotient	Score on Preliminary Test	Score on Final Test	Gain
1	112	100	100	0
2	100	95	100	5
3	76	95	100	5
4	109	95	100	5
5	.....	95	100	5
6	116	90	100	10
7	79	90	100	10
8	105	80	100	20
9	100	80	100	20
10	96	75	85	10
11	99	70	100	30
12	102	70	100	30
13	90	70	90	20
14	71	70	100	30
15	105	65	100	35
16	89	65	75	10
17	76	60	85	25
18	115	55	95	40
19	92	55	90	35
20	89	30	65	35
21	94	20	55	35
Average	95.8	72.6	92.4	19.8

TABLE VII

AVERAGE PERCENTAGE OF GAIN BETWEEN PRELIMINARY AND FINAL TESTS BASED ON COLUMN N OF THE BUCKINGHAM EXTENSION OF THE AYRES SPELLING SCALE

Group	Average Percentage of Gain
Class of 21 pupils	38.2
Best 10 pupils	10.7
Poorest 11 pupils	63.3

pupils and by the poorer pupils is explained by the fact that both the initial and the final tests were too easy for the better pupils. If the test words had been more difficult, the better pupils, as well as the

entire class, would probably have made a more significant gain. The fact that four of the eleven pupils who made low scores on the preliminary test made perfect scores on the final test indicates that the average gain of the poorer half of the class would have been still more significant if more difficult words had been selected.

TABLE VIII

CORRELATION BETWEEN INTELLIGENCE AND ACHIEVEMENT IN SPELLING

Measure of Achievement in Spelling	Intelligence Quotient*	Mental Age*
Twenty words selected from Column N of the Buckingham-Ayres scale.....	.20±.14	.24±.14
The 1,252 words in the Jones second- and third-grade lists.....	.28±.14	.35±.13

* The measures of intelligence were obtained by means of the Otis Group Intelligence Scale, Advanced Examination, Form A.

TABLE IX

AVERAGE SCORES OF VARIOUS INTELLIGENCE-QUOTIENT GROUPS ON THE PRELIMINARY TESTS

Intelligence-Quotient Group	Average Intelligence Quotient	Average Score on Buckingham-Ayres Scale	Average Number of 1,252 Words in the Jones Lists Spelled Correctly
Upper half.....	106	80	1,185
Lower half.....	85	63	1,079
Highest third.....	109	79	1,179
Middle third.....	97	66	1,096
Lowest third.....	81	69	1,115

Several significant facts with regard to the relation between intelligence and achievement in spelling are revealed by an analysis of Tables VIII, IX, and X. First, no significant correlation was found between intelligence and achievement in spelling. Second, a slightly higher correlation was found between mental age and the ability to spell than between intelligence quotients and the ability to spell. Third, a somewhat higher correlation was found between intelligence and the results of the test based on the Jones second- and third-grade lists than between intelligence and the re-

sults of the Buckingham-Ayres scale. Fourth, when the pupils were grouped according to their intelligence quotients, the average scores of the lowest third on both tests were higher than those of the middle third.

The following conclusions seem to be justified by the data presented.

1. Marked improvement in the ability to spell may be expected when teaching is based on a technique which discovers words that are difficult for the group and for individuals and identifies for each pupil the difficult parts of the troublesome words.

TABLE X

AVERAGE SCORES OF VARIOUS MENTAL-AGE GROUPS ON THE PRELIMINARY TESTS

Mental-Age Group	Average Mental Age	Average Score on Buckingham-Ayres Scale	Average Number of 1,252 Words in the Jones Lists Spelled Correctly
Upper half	10.1	74	1,153
Lower half	9.0	69	1,110
Highest third	10.3	79	1,182
Middle third	9.6	74	1,153
Lowest third	8.8	62	1,063

2. Different parts of the same word may prove difficult for different pupils.

3. Class work should be so organized that each pupil can give attention to the words which he finds difficult.

4. Instruction and study should be focused at the points of difficulty.

5. The grade placement of words should be determined on the basis of more careful investigation. Evidence in support of this statement is found in the fact that the pupils misspelled more second-grade words than third-grade words.

6. Intelligence seems to bear no significant relation to the ability to spell.

7. Mental age shows a slight superiority over the intelligence quotient as a guide in predicting achievement in spelling.

THE RELATION OF INTELLIGENCE AND PERSONALITY TO SPEECH DEFECTS

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INTRODUCTION

The incidence of speech defects among the population, especially the school population, is great enough to constitute a serious problem. Although early studies estimated that from 2 to 3 per cent of the pupils in school were speech defectives, later and more careful studies give from 5 to 8 per cent as a conservative estimate. Studies of the incidence of stuttering among school children give estimates varying from .7 per cent to .9 per cent. Seven surveys of the speech of school children reported by Wallin (31: 214)[1] gave an average percentage of stutterers of .9. In 1904 Conradi (12: 365) reported an investigation of the incidence of speech defects among 87,440 school children in six American cities: Albany, New York; Cleveland, Ohio; Kansas City, Missouri; Louisville, Kentucky; Milwaukee, Wisconsin; and Springfield, Massachusetts. He found that .87 per cent of the children stuttered and that the total percentage of speech defectives was 2.46. In a study reported in 1916 Wallin (31: 214) used the questionnaire method in studying 89,057 children in the public schools of St. Louis and found that 2.8 per cent were speech defectives; .7 per cent of the children were stutterers, and 1.6 per cent were lispers (those with defects of articulation). Smiley Blanton made a study of school children in Madison, Wisconsin (8), and another of Freshmen at the University of Wisconsin (7). In the former study (8: 583), reported in 1916, he found that 5.69 per cent of 4,862 children were defective in speech. Seventy-two hundredths per cent were stutterers; 3.27 per cent were lispers; and 1.71 per cent suffered from miscellaneous defects. The percentage of children with speech defects is more than twice as large as the 2.46 per cent found

[1] The first number in parentheses refers to the numbered bibliography at the end of this article; the second number is the page reference.

by Conradi and the 2.8 per cent found by Wallin. The percentage of lispers found by Blanton is more than twice that found by Wallin. This discrepancy may perhaps be accounted for by Wallin's use of the questionnaire. Blanton feels that his estimate is conservative. In 1921 Blanton (7: 822) reported that he had examined 1,400 of the 2,240 Freshmen at the University of Wisconsin and estimated that 409 students in the whole class, or 18.3 per cent, were unable to meet the necessities of English speech. The majority of these students were stutterers and lispers.

Root (22: 257–58) summarizes several studies made in the United States. He found that the report of the State Department of Public Instruction of Wisconsin for 1922–24 gave the percentage of pupils with speech defects as 5 to 7. A later study (1923–24) in Madison, Wisconsin, showed that 5.4 per cent of 5,717 pupils were defective in speech. In 1925 in Kenosha, Wisconsin, 5 per cent of 6,051 pupils were said to be speech defectives. "On the basis of examinations given in a survey of about seventy schools in 1925, the supervisor of speech improvement of the public schools of Philadelphia stated that from 10 to 12 per cent of the school population suffered from defects of speech" (22: 258). In 1925 Reading, Pennsylvania, reported that 5.6 per cent of the 11,198 pupils in the grade schools were speech defectives.

In 1926 Root (23: 533) reported his own study of 14,072 pupils in the public elementary schools in South Dakota. He found that 6.3 per cent of the children were speech defectives. One and two-tenths per cent of the pupils were stutterers. In 1928 McDowell (19: 6) reported a study of 7,138 children in seven elementary schools in New York City and found that .87 per cent stuttered. Both Root and Blanton found the percentage of speech defectives to be greater in the first two or three grades than in the higher grades. In Grade I, Blanton (8: 586) found 11.05 per cent; in Grade VIII, 2.65 per cent. Root (23: 534) agrees closely, having found 9.3 per cent in Grade I and 4.0 per cent in Grade VIII.

What is the relation of intelligence and personality traits to speech defects? These two factors have often been regarded either as causing defective speech or as being symptomatic of it. What is the experimental evidence with regard to the two views?

Intelligence is measured by a host of mental tests with varying merits. "Intelligence" is generally assumed to mean the individual's skill in adapting himself to a new situation. Freeman gives the following definition of personality. "Personality is not a technical, psychological term, but it may serve for convenience to include a number of varieties of mental traits which are not intellectual and yet which depend, in some measure at least, upon the individual's native or inherited make-up" (16: 191). By "personality" is meant the whole organism acting as a unit, and a trait means the consistency of reaction to situations.

In assembling the data for this article, the writer has used Fletcher's classification of speech defects (15): (1) Aphemia— aphasia and anarthria—caused by abnormalities of the brain. (2) Paraphemia—defects of articulation or mispronunciation. There are two kinds of paraphemia: (*a*) organic, caused by nasal stenosis or by any injury to, or variation in the structure of, the tongue, the lip, the hard or soft palates, the nasal, pharyngeal, or buccal cavities, such as harelip, tongue-tie, and teeth out of line or missing; (*b*) developmental (functional), such as baby talk and difficulties caused by faulty hearing. (3) Dysphemia—stuttering.

Fletcher's statement of the differentiae of stuttering may serve as a definition:

> In the first place, stuttering is not referable to any central or peripheral cause. . . . . In the second place, it is intermittent in its appearance. . . . . In the third place, the appearance of stuttering is closely associated with certain characteristic mental attitudes, the excitants of which are social situations in which the stutterer finds it necessary to respond in spoken language to other persons. This relation of the stutterer's inability to talk to the conditions of his social milieu is the outstanding characteristic of his disorder [15: 43].

EXPERIMENTAL DATA ON THE RELATION OF INTELLIGENCE TO SPEECH DEFECTS

Stinchfield (29) mentions several investigations of the relation of intelligence to speech defects. Two of these studies deal with speech in mentally deficient children. H. Ashby found that slurring, lalling, and lisping in a child five or six years old are frequently associated with defective or subnormal mentality (29: 68). Dr. Lapage states that feeble-minded children have consonantal defects (29: 68–70). The Belchertown State School for the Feeble-minded, Belchertown,

Massachusetts, reported in June, 1927, that ten out of eleven children of the upper mental level who had poor speech could profit by instruction (29: 69). Stinchfield (29: 39–41) gave speech tests to the Freshmen at Mt. Holyoke College and found as many girls of good intelligence in the groups needing corrective speech instruction as in the superior-speech groups. Stinchfield makes this impressive statement: "Every stutterer found at Mt. Holyoke during a period of six years has been well above average in intelligence" (29: 47). Stinchfield (29: 40) says that stuttering is not related to intelligence but is caused by emotional instability, faulty home training, organic or functional disturbances, personal peculiarities, over-stimulation, or imitation. Stinchfield (29: 41) states that the median score on the college-entrance examinations for the group of students in need of corrective speech instruction was 71.8 as compared with 77.3 for the group with superior speech. The former group of students made a median of 543 points on the scholastic-aptitude tests as compared with 544 points for the latter group. It will be noticed that there is no significant difference between the two groups.

Fletcher (15) mentions several investigations among mentally defective children. "Wallin found that in St. Louis more than one-fourth of the pupils in the special schools [for mentally defective children] were reported as having some form of speech defect. The speech defects of all kinds in these special schools were more than ten times as prevalent as they were among the normal children in the white elementary schools. The ratio of severe to mild disorders of speech is greater among the special classes than among the normals" (15: 76). Fletcher (15: 77) cites a study made by Cassel in Berlin, in which it was reported that 33.5 per cent of defective children spoke imperfectly. Dr. Eichholz, a London school inspector, found speech defects in 75 per cent of the defective children (15: 77). However, Fletcher does not believe that stuttering is a pathognomonic symptom of mental defect but that many stutterers are mentally alert. He refers to the study of British genius made by Havelock Ellis in which it was found that thirteen eminent persons stammered.

In a study of stuttering children in New York City, McDowell (19: 6–12) used four tests: Stanford revision of the Binet intelligence test; the Pintner-Patterson Shorter Performance Scale; and

two Binet tests dealing largely with language abilities selected for special comparison, namely, the free-association test at the ten-year level and the vocabulary test.

McDowell tested sixty-one stutterers by means of the Stanford revision of the Binet intelligence test and found scores ranging from 63 to 156. The mean score was 99.14 with a standard deviation of 20.3. The group was typical as judged by the norms. McDowell does not consider this study comparable to other studies because the latter did not limit the diagnosis and because 7,138 school children (the number in McDowell's study) is not a large enough number to give a representative sampling. From children varying widely as to race and occupation of the parents, two groups were equated to eliminate racial and language backgrounds. When she had equated the groups, McDowell used fifty of the original sixty-one stutterers for an experimental group and the same number for a control group. The experimental group had a mean intelligence quotient of 101 with a standard deviation of 19.87; the control group, a mean intelligence quotient of 102 with a standard deviation of 20.26. There is no significant difference here.

On the Pintner-Patterson Shorter Performance Scale the stutterers had a mean intelligence quotient of 104.2 with a standard deviation of 26.73; the control group, a mean intelligence quotient of 99.8 with a standard deviation of 23.0. There is a difference of 4.4 in favor of the experimental group, but the experimental coefficient is low (.317).

The free-association test at the ten-year level requires the subject to name as many words as he can think of in three minutes. In spite of blocking, the stutterers had a mean score of 69.1665 as compared with the mean score of 69.7220 for the control group. The standard deviation for the stutterers was 26.77; for the control group, 20.56. The experimental coefficient is low (.04).

On the vocabulary test, the stutterers had a mean score of 31.2448 with a standard deviation of 12.08; the control group had a mean score of 30.551 with a standard deviation of 13.43. The experimental coefficient is again low (.097).

The McDowell study, therefore, did not discover any significant differences in the mean intelligence quotients of stutterers and nor-

mal children. This fact means that the distribution of intelligence is the same in both cases.

May Kirk Scripture and Winifred Boyd Kittredge proposed three questions in their study: "What is the mental level of the stutterer? What is the nature of his mental development, i.e., do his responses show an even or scattered development? And finally, has he a special word disability?" (28: 166)

They found a median intelligence quotient of 92, with a range from 56 to 130, for a group of sixty-two stutterers in the speech department of the Vanderbilt Clinic during 1921. The median age was twelve years and eight months. The subjects were distributed into eight groups on the basis of their intelligence quotients. The largest number of individuals in any one group appeared in the group with intelligence quotients from 85 to 95, which comprised thirteen individuals. Of the entire group, eight were feeble-minded, eight borderline cases, eight very low normal, thirteen low normal, eight normal, six above normal, six superior, and five very superior. Scripture and Kittredge make the comment in this study that the cases were few and selected because "individuals who seek help from charitable institutions tend to have low normal median intelligence quotients. Terman through objective measurements on different social classes proved this (*Measurement of Intelligence*, page 72)" (28: 167).

With regard to scattered mental development, Scripture and Kittredge state "an uneven development (i.e., markedly above one's norm in certain measurements and markedly below in others) is symptomatic" (28: 168). For example, an eight-year-old child who has the height of a twelve-year-old child is uneven in development. In the mental sphere, they cite a case of a fourteen-year-old boy who was in the fifth grade. "He failed on some of the tests at the third-year level and had scattering successes up to the fourteenth year" (28: 168). This was regarded as being symptomatic, and it was found that he had juvenile paresis. If there is no organic basis (as in this case), the uneven development is functional and requires educational therapy. "An individual with an uneven mental development, and consequently a poorly integrated nervous mechanism, is liable to emotional 'upsets'; he is unstable, and his responses to the

situations of the environment are liable to be of a bizarre nature. . . . . Such an individual often develops character defects of an anti-social nature" (28: 168). In their investigation with regard to uneven development, Scripture and Kittredge found first the difference between the basal age and the upper limit for each stutterer. "The basal age is that point at which the subject passes all the tests, and the upper limit is the point where he fails in all of the tests. . . . . Although an uneven intellectual development of three or four years above the basal age is a natural condition, a matter of five, six, seven, or more years above the basal age is . . . . symptomatic" (28: 169–70). The authors accepted three years as normal; four, as a borderline condition; five or more, as an indication of abnormal mental development. Of the sixty-two stutterers, Scripture and Kittredge found ten with normal uneven development, fifteen with uneven development of four years, and thirty-seven with abnormal uneven development.

In their study Scripture and Kittredge also undertook to determine whether the stutterer has a special word disability. They used the vocabulary test of the Stanford Revision of the Binet-Simon Test, which begins at the eighth year. Therefore, the children under eight years of age who were not superior in intelligence could not be examined. This limitation left fifty cases out of the original sixty-two. The median chronological age of these fifty children was thirteen years and six months; the median mental age was eleven years and nine months, a difference of one year and nine months. The difference between the median chronological age and the median vocabulary age is two years and seven months, or nearly twice as great as the difference between the chronological age and the mental age. Clearly, then, the stutterer has a word disability. Forty-two had vocabulary ages below both their chronological ages and their mental ages; five had vocabulary ages above their chronological ages but below their mental ages. The five were of very superior intelligence, and "we may assume from this that the word disability was so severe that it could not be overcome in spite of the superior intelligence" (28: 171).

Scripture and Kittredge believe that this study throws light on the etiology of stuttering. "These stutterers in forming speech habits

were first handicapped by intelligence" (**28**: 172). This handicap is accompanied by an unstable emotional condition, and stutterers are further handicapped in making a response by a word disability. The formation of a speech bond is therefore difficult.

The following conclusions may be drawn from the studies of intelligence as related to the different kinds of speech defect.

1. Low intelligence frequently accompanies delayed speech and language difficulties. In some cases low intelligence accompanies stuttering. The studies by Ashby (**29**: 68), Lapage (**29**: 68–70), Wallin (**15**: 76), Cassel (**15**: 77), and Eichholz (**15**: 77) show these statements to be true.

2. A study of stutterers shows them to possess every degree of intelligence. McDowell (**19**: 9–10) says that the distribution is the same as for normal individuals; Stinchfield (**29**: 38–43) found high intelligence among stutterers; Scripture and Kittredge (**28**: 167) found low mean intelligence quotients, but they admit that their sampling might very easily give low scores.

3. The studies show a wide range of intelligence from low to high with no uniform rating. This conclusion applies to persons suffering from all classes of speech defects and is the same as the conclusion for stutterers alone.

4. The use of intelligence tests may be helpful in indicating symptoms of speech defects but not in locating their causes.

EXPERIMENTAL DATA ON THE RELATION OF PERSONALITY TRAITS TO SPEECH DEFECTS

There have been but few experimental studies of the relation of personality traits to speech defects. Hundreds of personality tests exist, but many of them have not been validated for diagnosing difficulties of speech.

McDowell (**19**: 13–23) used three tests of personality traits: (1) a combination of the Woodworth-Mathews questionnaire and the Woodworth-Cady questionnaire for identifying individuals with psychotic tendencies; (2) the Kent-Rosanoff Free Association Test; and (3) a teacher's rating made on the basis of the trait inventory used by Terman in his study of gifted children. In administering the questionnaire test, McDowell used individual interviews in place of

a group test. In none of these tests did McDowell find startling differences between stutterers and normal children.

In the first test the stutterers had a mean score of 22.6522 with a standard deviation of 9.616; the control group, a mean score of 20.1304 with a standard deviation of 9.9532. There is, then, a difference of 2.5218 and a large variability. The experimental coefficient is .44, indicating less than half certainty. In the individual questions, the stutterers admitted more often than did the normal children that they lost their breath quickly when they ran, but on other questions there was little difference between the two groups. For this one difference (2.4), there is an experimental coefficient of .907.

In the second test, the Kent-Rosanoff Free Association Test, "the time reactions for each child were made into a distribution, and the mid-score and limits of the upper quartile were determined" (19: 16). The mean of the mid-scores for stutterers is 2.8951 with a standard deviation of 1.164; for the control group, 2.6951 with a standard deviation of .9228. The experimental coefficient of .310 indicates less than half certainty. The reaction time of 9 per cent of the stutterers and 7 per cent of the control group was excessive (eight seconds or more) with an experimental coefficient of 1.3. On common responses the mean for stutterers is 69.2075 with a standard deviation of 22.13; for the control group, 70.427 with a standard deviation of 21.415, a difference of 1.2195. The experimental coefficient is .091. On individual responses there is a difference of .3655 in favor of the stutterers, but the experimental coefficient is only .028. On doubtful responses the mean for stutterers is 5.2317 with a standard deviation of 4.6606; for the control group, 4.256 with a standard deviation of 3.707. The experimental coefficient is .028. McDowell concludes that the Kent-Rosanoff Free Association Test does not reveal any distinctive traits which lie in the stutterer's emotional adaptations. For key words there is no appreciable difference between the mid-score and the upper quartile. The key words, supposed to be suggestive of particular emotional inadequacies of stutterers, revealed no important differences in reaction time.

In the third test—trait ratings—one rating by the teacher of each child was used (19: 22). The traits rated were the twenty-four selected by Terman in his study of gifted children—popularity with

other children, self-confidence, cheerfulness, etc. In the case of each child the teacher indicated his judgment of the amount of each trait possessed by the child by means of a scale of seven points representing gradations from one extreme to the other. The differences between stutterers and normal children were very small except for two traits. For self-confidence, there is a difference of .7482 with a standard deviation of .2339 in favor of the control group and an experimental coefficient of 1.15, indicating certainty. In sensitiveness to approval there is a difference of .4220 with a standard deviation of .2629 and an experimental coefficient of .58. These two differences support the popular belief that the stutterer is backward and shy.

Fletcher (14) made an experimental study of psychophysical symptoms in stuttering. He studied changes in blood distribution and in pulse rate and galvanic changes. In studying the changes in blood distribution, Fletcher used the plethysmograph (14: 225–26). He found that in the majority of stutterers any sudden concentration of attention, as in reading, resulted in an attention drop, which marks the movement of the blood toward the central blood vessels. In the return of the blood from the central vessels, the peripheral system showed dilatation, which lasted until the end of the stuttering period. The amount of general rise of the plethysmograms corresponded with the degree of stuttering. Fletcher regards changes in blood distribution not as causal, but as accompanying, symptoms. In studying the pulse rate, Fletcher (14: 226) took three readings: the first, prior to the speaking interval (average, 88.9); the second, at the beginning of the speaking interval (average, 99.1); and the third, after the speaking interval (average, 97.2). When these averages are compared with the normal pulse rate of 72, it can be seen how the stutterer is affected by the speaking situation. With regard to galvanic changes, Fletcher found "that the stutterer is subject to a period of galvanic disturbance prior to the speaking interval; that this condition continues in varying degree throughout the interval of stuttering; that . . . . the degree of galvanic deflection varies approximately with the severity of the stuttering" (14: 228). These studies made by Fletcher are important contributions to the etiology of stuttering and confirm his thesis that stuttering is the result of an emotional difficulty.

A test which has become prominent in the last ten years is the

Downey Will-Temperament Test, which uses handwriting as a means of diagnosis. This test deals with overt reactions and is based on two fundamental factors: " 'the amount of nervous energy at the disposal of the individual' " and " 'the tendency of such nervous energy to discharge immediately into the motor areas and innervate the muscles and glands or, on the contrary, to find a way out by a roundabout path of discharge' " (16: 193). The profiles resulting from the tests "indicate three general patterns of 'will' traits: (1) the wilful and aggressive type; (2) the slow, accurate, and tenacious type; and (3) the explosive or 'hair-trigger' type "(1: 132).

An application of the Downey test to speech has been made by Downey in collaboration with Lovisa Wagoner (30). They attacked the problem from two different angles: "(1) Do different varieties of speech defectives, when given the Downey Will-Temperament Test, show any characteristic profiles?" (30: 291) That is, are there temperamental and volitional qualities which underlie individual variations in the timbre and volume of the voice and in rate of speaking? "(2) Is the graphic will-temperament test, in which writing exercises are used to determine the dynamic or activity level of the individual, translatable into a vocal test in which vocal exercises are used? If so, do the two profiles obtained by these different methods of procedure resemble one another in any way?" (30: 291)

The remedies usually applied in cases of speech defects, say Wagoner and Downey (30: 292), are correction of anatomical and physiological defects and the formation of new habits. That the corrector of speech defects recognizes the fundamental nature of the temperamental difficulty underlying the symptom is shown by the fact that he stimulates self-confidence and reduces self-consciousness largely by means of a trial-and-error method and by the influence of his personality. Emotional disturbances—such as dependence on parents, feeling of inferiority, and repression—have long been recognized, but the temperamental traits have been ignored.

Wagoner and Downey (30) cite Anderson's study (3) to prove that what have been regarded as causes are really symptoms of a more deeply seated maladjustment. "There are [Anderson's study indicates] innate traits and combinations of traits which are conducive to the development of speech disorders. . . . . Speech defects

are the outward manifestation of temperamental and volitional traits. . . . . Complexes, blocking, and repression are only symptoms" (30: 294). Anderson says: "Stutterers differ from certain other people not merely in speech reactions but in other types of reactions which have no apparent connection with speech. Thus, there is objective evidence that stuttering and allied disorders are something more than defects of speech" (4: 70).

Anderson's study was experimental. He used control groups and separated his cases into groups of improved stutterers, unimproved stutterers, excitable persons, and normal persons. He studied the mental and physiological factors common to vocal and non-vocal functions. "The results of a foot-tapping test showed no characteristic difference between stutterers and normals but much greater regularity and greater rapidity on the part of ex-stutterers" (30: 293). In following the metronome, the rhythm and the co-ordinated arm movements of stutterers were better. In memory span for movement, the stutterer was inferior to the normal person, showing an inability to hold several things in mind at once, a kinaesthetic lack of co-ordination. With regard to imagery, the stutterer's difficulty was not with imagery itself but with its co-ordination. This fact showed more relation to intelligence than to stuttering. Anderson gave an inhibition test, which required the raising of the arm whenever the number "three" was read after an odd number. The stutterer could not check the response after it had been started.

Wagoner and Downey consider the Anderson study similar to theirs in general purpose. At least, the two are similar in that they measure physical reactions and co-ordinations as the basis of a study of temperamental traits. Wagoner and Downey found several types of speech defectives when the will profiles were plotted: "The individual who speaks with great deliberation or hesitancy gives a will-temperament profile running low on speed of movement and of decision, low on motor impulsion and finality of judgment, and high on interest in detail. . . . . Conflicts in temperamental traits might well cause speech blocking, which in extreme cases would lead to stammering or stuttering. Our profiles of occasional stammerers . . . . frequently suggest possibilities of conflict, for example, high speed of decision with low speed of movement and low motor im-

pulsion. The common features seem to be low motor co-ordination, low motor impulsion, and low motor inhibition. In these respects our findings agree with Anderson's. . . . . Public speakers . . . . run very high on motor impulsion" (30: 295). They maintain handwriting under distraction, showing large writing whereas the inhibited show a tiny scrawl. There is another possibility. "Deficient co-ordination and motor inhibition may give the speaker who 'stumbles over himself' . . . . or the speaker of the piercing voice or disagreeable nasality of tone" (30: 296).

Wagoner and Downey (30: 297) believe that the handwriting test can, therefore, be easily converted into a vocal test by using speed of vocalization, pitch, and volume as criteria in measuring the following traits: (1) speed of movement, measured by the speed of vocalization and normal pitch and volume under normal conditions as compared with the results of a speeded recitation; (2) flexibility, measured by "the ability to shift pitch and volume"; (3) interest in detail, measured by the "precision of enunciation in reading test phrases"; (4) co-ordination of impulses, measured by "the speed of vocalization"; (5) freedom from load, measured by "the length of time required to readjust after interruption together with the ratio of normal to speeded recitation"; (6) motor impulsion, measured by "the ability to maintain rate and quality of vocalization while maintaining other activities, such as reading silently"; (7) motor inhibition, measured by "the degree of retardation in recitation"; (8) reaction to contradiction, measured by "the response to the statement that a given letter has been omitted in recitation"; (9) emotional stability, or volitional perseveration, measured by "the vocal reaction when a shrill whistle is blown during the recitation."

Wagoner and Downey believe that the preliminary experience with the vocal test has been encouraging. They state:

> As norms have not yet been established for this test, it is possible to give only an estimate of the correspondence between the two forms of the will-temperament test in terms of coefficients of correlation. . . . .
>
> Twenty-three subjects were ranked according to their scores on the graphic and vocal form of the will-temperament test for the nine traits for which parallel tests had been determined. The correlation coefficients by the rank method were positive and high for motor impulsion (rated on time only), motor inhibition, and reaction to contradiction; positive and mediumly high for flexibility

and interest in detail (scored in vocal test on flat number of errors); and positive but low on co-ordination of impulses and volitional perseveration. For freedom from load and speed of movement, there was no indication of relationship. In the graphic test the scored records are preceded by preliminary practice in order to overcome self-consciousness, and it is proposed to give such preliminary practice in the vocal test and determine the effect of this upon the correlation for speed. . . . .

Revision . . . . and the establishment of norms are now in progress [30: 297].

Further evidence of the emotional difficulty of the speech defective is afforded by studies of retardation in school. Stinchfield (29: 38–39) found that at Mt. Holyoke the girls needing corrective speech instruction, though as high in intelligence, failed in their work and were not leaders. In a study in Hamburg, Germany, it was found that the higher the grade, the greater the retardation (13: 36). "In their fourth school year about 50 per cent [of the speech defectives] are below the fourth grade; in their fifth school year 65 per cent are below the fifth grade; in their sixth school year about 77 per cent are below the sixth grade; and in their seventh school year about 80 per cent are below the seventh grade" (13: 36). Westergaard in Denmark found that speech defectives are over-age (13: 36). H. Gutzmann in Germany found "that 10 per cent of the parents of eight hundred stuttering children admitted without being asked that the speech defect caused their children to be behind in school. He says that he has often found that children will remain two or three years in the first grade on account of stuttering, but, when speech was cured, they developed rapidly and not only kept pace with their class at the time of cure, but caught up what they had lost" (13: 35–36). Conradi (13) in his studies of six American cities found that in every grade the age of the stutterers is higher than that of normal children. He says: "We should remember that such children are behind, probably not on account of any mental inferiority, but either because they are neglected by their teachers or because they are discouraged on account of a sensitiveness with regard to their trouble or on account of the jeering of their classmates. Whichever of these causes may be operative, however, the fundamental condition is the defect of speech, and, with the removal of that, normal intellectual development becomes possible" (13: 37).

Blanton (8: 585) found that the increased percentage of speech difficulty in the first grade is partly attributable to the breaking of home associations and the study of reading, that stuttering increases retardation grade by grade, and that many drop out at the end of the fifth grade. He says: "Many children are so retarded in their school work by their speech defect that they drop out as soon as they reach the age when the law allows them to stop school. . . . . In the case of stutterers, even though the symptom be recovered from, there remains in many cases the original mental conflict, the lack of adjustment that causes other neurotic symptoms beside stuttering" (8: 585).

Root measured retardation by over-ageness and found that "speech defectives are, as a general rule, a half-year older than the average pupils of the same grade" (23: 538). Retardation according to school progress shows an average retardation of 10.49 months. "The amount of retardation in actual school progress of all speech defectives shows a general increase from Grade I to Grade IV, after which there is a tendency toward uniformity" (23: 541).

Retardation in school and speech defect are, then, closely connected. Much of this retardation, not being the result of poor intelligence, is probably due to difficulties of personality.

The following paragraphs summarize the studies of personality traits as related to speech defects.

1. McDowell (19) found surprisingly little correlation between stuttering and specific personality traits, except for one or two traits which indicated emotional difficulty.

2. Fletcher's study (14) of psychophysical symptoms in stuttering showed an emotional difficulty underlying the stutterer's attempt to speak.

3. The vocal form of the Downey Will-Temperament Test is promising, but it needs standardization and the establishment of norms (30).

4. In general, Anderson's experimental study (4) of stuttering as related to voluntary movements, supports the findings of McDowell and Fletcher.

5. These four studies show that the stutterer and, it may be inferred, many speech defectives of other types suffer from a feeling of inadequacy in emotional situations.

GENERAL CONCLUSIONS

1. Varying levels of intelligence are found in various kinds of speech defects. Low intelligence is a symptom, rather than a cause, of speech defects.

2. Personality traits are more enlightening than intelligence in the study of speech defects, since they point to emotional difficulties as the source of stuttering and kindred speech defects. Retardation in school in the case of speech defectives is not caused by lack of intelligence but is an emotional maladjustment, which may be remedied by an understanding of the personality of the individual.

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READING IN THE ELEMENTARY SCHOOLS OF NEW MEXICO

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During the school year 1928–29 a survey of reading in the elementary schools of New Mexico was planned under the direction of the University of New Mexico. The co-operation of city, town, and county superintendents was secured in order that there might be a representative sampling. Tests I and II, Form 1, of the Monroe Standardized Silent Reading Test (Revised) were given by the schools March 25–29, 1929. The papers were marked by the teachers, and the scores were forwarded to the University. The scores were then tabulated and the medians determined. Table I shows

TABLE I

MEDIAN SCORES IN COMPREHENSION AND RATE OF READING OF PUPILS IN GRADES III–VIII

GRADE	NUMBER OF PUPILS	COMPREHENSION		RATE	
		Median Score	Standard Score	Median Score	Standard Score
III	1,954	5.39	6.4	93.29	109
IV	1,835	7.63	9.1	116.87	135
V	1,811	9.77	10.6	135.48	153
VI	1,548	10.63	12.0	140.02	167
VII	1,505	11.79	13.3	151.94	180
VIII	1,246	13.45	14.5	167.21	195

the median scores in comprehension and rate for Grades III–VIII.

This table presents a grave situation. The standard scores represent the norms in reading for the respective grades at the time that the test was given. In every grade the median scores in both comprehension and rate are below what they should be. The teachers who supplied data for this study were probably those who were doing the better teaching, since only those most interested took part in the survey. If every teacher in the state had assisted, the median scores would probably be considerably lower.

In an effort to find out more about the results, the scores of the children who speak English, the scores of those who speak Spanish, and the scores of those who speak other foreign languages were tabulated separately. The scores of the English-speaking children and of the Spanish-speaking children are shown in Table II. This table shows that in most of the grades the English-speaking pupils were practically up to the normal in comprehension but considerably

TABLE II

MEDIAN SCORES IN COMPREHENSION AND RATE OF READING OF ENGLISH-SPEAKING AND SPANISH-SPEAKING PUPILS IN GRADES III–VIII

	Number of Pupils	Comprehension		Rate	
		Median Score	Standard Score	Median Score	Standard Score
Grade III:					
English-speaking pupils	1,047	6.37	6.4	99.71	109
Spanish-speaking pupils	837	4.50	6.4	87.08	109
Grade IV:					
English-speaking pupils	1,028	8.50	9.1	120.00	135
Spanish-speaking pupils	737	6.32	9.1	111.72	135
Grade V:					
English-speaking pupils	1,098	10.55	10.6	141.83	153
Spanish-speaking pupils	632	8.39	10.6	125.92	153
Grade VI:					
English-speaking pupils	1,017	11.59	12.0	147.45	167
Spanish-speaking pupils	467	8.88	12.0	122.17	167
Grade VII:					
English-speaking pupils	1,011	12.91	13.3	162.23	180
Spanish-speaking pupils	422	9.98	13.3	133.44	180
Grade VIII:					
English-speaking pupils	918	14.37	14.5	174.87	195
Spanish-speaking pupils	271	10.78	14.5	146.81	195

below the normal in rate. The Spanish-speaking pupils were considerably below the standard in both comprehension and rate. These facts are brought out more plainly in Table III. This table should be interpreted as follows: In the third grade the children speaking English were .01 of a grade below standard in comprehension, and the Spanish-speaking pupils in the same grade were .70 of a grade below standard. In other words, there was a difference of .69 of a grade between the performance of the two groups. Similarly, there was a difference of .49 of a grade in rate. A glance down the table reveals that the Spanish-speaking pupils were from two-thirds of a

grade to almost three grades below the English-speaking pupils. Another fact of great significance is that in comprehension the differences between the English-speaking pupils and the Spanish-speaking pupils increase with the length of time in school; that is, the smallest difference is in the third grade and the largest difference is in the eighth grade. The smallest difference in rate is in the fourth grade, while the largest difference is in the sixth grade. These are some of the facts which the survey has shown, and they must be accepted until a more elaborate and comprehensive survey is undertaken.

TABLE III

NUMBER OF GRADES ENGLISH-SPEAKING PUPILS AND SPANISH-SPEAKING PUPILS IN GRADES III–VIII WERE BELOW NORMAL IN COMPREHENSION AND RATE OF READING

GRADE	COMPREHENSION			RATE		
	English-speaking Pupils	Spanish-speaking Pupils	Difference	English-speaking Pupils	Spanish-speaking Pupils	Difference
III.....	.01	.70	.69	.35	.84	.49
IV.....	.40	1.85	1.45	.83	1.29	.46
V.....	.03	1.57	1.54	.79	1.93	1.14
VI.....	.31	2.40	2.09	1.50	3.44	1.94
VII.....	.32	2.76	2.44	1.18	3.10	1.92
VIII.....	.10	2.86	2.76	1.18	2.83	1.65

Why should the reading scores of the native Spanish-speaking children be progressively lower than those of the English-speaking children as they proceed through the grades? The consensus is that there is more reading in English in the homes of the English-speaking children than in the homes of the Spanish-speaking children. The factor of environment may partly explain the situation. During the first years in school the environment is more nearly equal, since neither English-speaking nor Spanish-speaking children can read at home and much attention is given to reading in school. The difference in environment is partly neutralized by the strong reading program of the schools. However, as the children progress through the grades, less attention is given to the subject of reading in the schools. At the same time, the difference in home environment operates more strongly each year. The English-speaking children

make use of their more favorable environment and continue to read. The Spanish-speaking children are unable to find material in English and gradually cease to read.

During the World War the draft revealed that thousands of men were unable to read simple material easily, although their records showed that they had attended school. The conclusion is that, because of lack of interest or of opportunity, these men had allowed their reading ability to become greatly weakened. The figures in Tables II and III substantiate this conclusion. As the pupils progress through the grades, their ability to read drops farther and farther below the standard.

"It is a matter of common belief, and there is some statistical evidence to show, that the amount and character of the material read are significant factors in producing individual differences in reading accomplishment. Zirbes' data show a correlation of 0.53 (Spearman) between home reading and rate. Facts secured by Gray, Theisen, and Woody indicate some correlation between reading ability and the amount read."[1] If it is true that the ability to read is influenced by the amount read, the way to remedy the situation is suggested. A strong reading program must be inaugurated in the intermediate grades. Teachers of these grades must be trained to use better methods. The excellent work of the first three grades must be continued. Realization of the facts must be brought to the proper authorities, and increased appropriations must be made for purchasing books for these grades.

Another outstanding fact revealed by the survey is the failure of the English-speaking children to reach the norm in rate. Reading consists of a hierarchy of habits. The efficiency of these habits is either increased or lowered by the methods of teaching used. The rate of reading, or speed, is one of the items which lends itself most easily to great improvement, as many experiments have shown. C. T. Gray gave the pupils of a fifth grade fifteen to twenty minutes of drill a day for one month. " 'Speed was the aim here, at the expense of comprehension, if necessary. Nevertheless, compre-

[1] William S. Gray, "Reading," *Research in Constructing the Elementary School Curriculum*, p. 196. Third Yearbook of the Department of Superintendence. Washington: Department of Superintendence of the National Education Association, 1925.

hension was also checked up by oral reproduction. . . . . In only two of the tests is there any decrease in comprehension.' . . . . The gain here varied from 84 per cent to 217 per cent."[1] Oberholtzer secured similar results. "One room showed an increase of 50 per cent in the rate after two weeks' practice in rapid reading. These tests showed that oral expression and the power to grasp the content were equally improved."[2] Not every teacher can be expected to secure such remarkable results, but there is no reason why every teacher in New Mexico cannot obtain some improvement if she is convinced of the importance of the problem and is willing to study the subject.

The data presented suggest very strongly that not enough attention has been given to training in silent reading, especially in the grades above the fourth. "Many teachers are almost entirely absorbed in oral reading, and this has led to an undesirable type of reading lesson common in schools. Under this method one pupil after another rises and reads one or two paragraphs without previous study, and then states, either in his own words or those of the book, the fragment he has read. Incidentally, a few mispronounced words are corrected, a few inflections and emphases are modified, and possibly some paragraphs are re-read. After the selection has been read in this way, the entire story is occasionally reproduced by one or more pupils."[3] The result is a lack of interest, effort, and practice in reading. To remedy this condition, a thoroughgoing program in silent reading must be inaugurated, especially in the intermediate grades. Teachers must be trained in the many different ways of teaching silent reading. Thought-getting must become commonplace. The habits formed in the reading class must be carried over into the study of geography, history, arithmetic, and other school subjects. Reading must be looked upon not as a subject apart from the rest of the curriculum but as a basic tool subject.

Reading can never be made a valuable tool until the school au-

[1] John Anthony O'Brien, *Silent Reading with Special Reference to Methods for Developing Speed*, p. 40. New York: Macmillan Co., 1921.

[2] E. E. Oberholtzer, "Testing the Efficiency of Reading in the Grades," *Elementary School Journal*, XV (February, 1915), 318.

[3] Calvin N. Kendall and George A. Mirick, *How To Teach the Fundamental Subjects*, p. 38. Boston: Houghton Mifflin Co., 1915.

thorities realize the necessity for extensive reading. It has been comparatively easy to persuade school boards to build new buildings and to buy new desks. They must also be shown the absolute necessity of adequate libraries. The teachers must be supplied with supplementary material in history and geography. It would be foolish to hire a chauffeur and not give him a car to drive; yet many schools hire teachers and give them no books with which to work. The pupils must be taught and encouraged to read widely. Such a program would furnish help for the Spanish-speaking children, who have little reading material in their homes, and must be carried out if the reading ability of the English-speaking children is to be brought up to standard and kept there.

This survey, then, justifies the following conclusions. (1) As a whole, the reading ability of the pupils in New Mexico is not up to standard. (2) The Spanish-speaking children are farther below the standard than are the English-speaking children. (3) A proper program in reading would do much to improve the present situation. (4) More reading facilities should be provided both for the Spanish-speaking pupils and for the English-speaking pupils.

Educational Writings

REVIEWS AND BOOK NOTES

Improving instruction in arithmetic.—In 1924 Professor Osburn published a book for teachers entitled *Corrective Arithmetic*. Recently the same author published *Corrective Arithmetic*, Volume II.[1] In the Preface the author states that this new volume "represents the completion of a task that was undertaken eight years ago. In 1924, when the work was half done, it seemed wise to publish the first half before the completion of the whole project" (p. iii).

In the first volume Professor Osburn discussed the techniques of diagnosis of pupil difficulties in processes and in problem-solving and suggested types of remedial work for use in overcoming the faults discovered. A brief statement of what to teach was also included in the discussion.

In the second volume Professor Osburn presents the results of "an extensive research program," based on studies of pupils' errors in solving examples and problems. There are nine chapters, in which are presented the author's theories as to the changes in arithmetic instruction that are needed if pupils are to learn arithmetic effectively. The first chapter is a brief statement of the need of corrective arithmetic. In chapter ix three functions of corrective arithmetic are stated as follows: "It aims to conserve what is good out of the past. It suggests remedial treatment for the pupils who are slow and enrichment for those who are bright" (p. 154).

In the second chapter there is a discussion of a proposed procedure to be used in improving the ability of pupils to solve problems. The technique that is suggested involves teaching pupils to recognize "cues" in problems. Professor Osburn says, "This word has been borrowed from the theater. Each actor must know what he is to do or say when his cue comes. Now in problem-solving there is always a part of the problem which tells the child what he is to do" (p. 12). The analogy does not strike one as valid. Cues in the theater are purely mechanical devices and do not call for reflective thinking, which is necessary in solving problems. The following illustrations show what the author considers to be cues in multiplication.

How many square rods in _____ A?
Reduce B bushels to qt.
A per cent is butterfat. How many pounds of butterfat? [P. 205]

[1] Worth J. Osburn, *Corrective Arithmetic*, Volume II. Boston: Houghton Mifflin Co., 1929. Pp. vi+280. $1.80.

Professor Osburn states that 40 per cent of the difficulties in problem-solving are due to failure to recognize the cue. The term "cue" as used by Professor Osburn has a meaning different from that which it had in earlier studies by Professor Judd. It seems to refer to the way in which a problem is stated, not to the situation presented. The pupil is to get the cue from a study of the words used in the problem. Appendix C lists by grades the cues in each process found at least five times in five series of textbooks for Grades III–VI. Their frequencies vary from 348 to 5. Wide variations in the cues found in these books are reported. There are, in all, 190 cues in multiplication in the textbooks analyzed. It is quite likely that an analysis of other books would add many cues to this list. In Appendix B the 190 cues in multiplication are grouped according to "sixty-six types of situations." The basis for distinguishing these types is not indicated and is not obvious. The situation is further complicated by the statement that there are two cues in division for each cue in multiplication. Professor Osburn maintains that "the slow child learns only what you teach him. If you want him to know sixty-six types, you will have to teach sixty-six types one by one" (p. 17). No evidence is presented to justify this assumption nor to prove that ability to solve problems is increased by exercises based on cues. The suggestion is made that the number of cues to be taught to slow pupils should be much less than the number to be taught to superior pupils. "We should . . . . teach first and best those cues which are the most useful in the life of the ordinary individual outside of school" (p. 23). Later in the book is presented a list of the cues to be taught in each grade. Throughout the discussion on problem-solving such statements as the following appear. "Be sure not to use the methods of spoon- and bottle-feeding with the bright pupils" (p. 37). These statements do not add to the dignity of the discussion.

The emphasis on cues seems to introduce an element of artificiality and unnaturalness in problem-solving that stresses the ways in which problems are stated rather than the life-situations presented in them. Practice in looking for verbal cues in lists of problems may result in growth in the ability to solve textbook problems; that such practice will enable the pupil to apply the processes learned to life-situations and life-activities should not be taken for granted. It would be interesting to study the comparative results of exercises in finding cues and of a series of activities in which the uses of number arise naturally and in which problem-solving is not a series of feats in mental gymnastics.

Chapters iii and iv contain an interesting and valuable discussion of the relative complexity of common and decimal fractions in terms of the number of steps involved in the solution of typical examples. Professor Osburn shows that the solution of such an example as $\frac{2}{3}+\frac{5}{8}$ involves seven steps. If the same example is solved by first changing the common fractions to decimals, the number of steps involved is reduced to three. Those who maintain that decimals are simpler than common fractions and should hence be taught before common fractions are taught will find these two chapters most suggestive. Professor Os-

burn's suggestion in chapter v that most of the difficulties in dealing with denominate numbers would be eliminated if the metric system were adopted is certainly valid.

The limitations of current curriculum investigations in arithmetic are the basis of the discussion in chapters vi and vii. The author maintains that such studies as those by Wilson are inadequate and incomplete because the persons involved reported only a small part of the arithmetic they actually used; they "were not using the best possible methods for their arithmetic work, and they were not using all of the arithmetic that they should have been using" (p. 82). He points out that ratio and proportion, which have been eliminated from many courses, are important tools for quick thinking when quantitative relationships are involved and should therefore be taught. He would have the arithmetic curriculum enriched and socialized. "Other things being equal, it is wise to select that element which will affect the lives of most people" (p. 102). In the upper grades he would start with the problems of individual economic welfare and would apparently subordinate the computational aspects of the subject and emphasize the sociological functions of number. Arithmetic would then be recognized as a content subject rather than a tool subject. Judging from the stress Professor Osburn places on social aspects of arithmetic, one would infer that he is not altogether in favor of the present tendency to teach algebra, geometry, and certain phases of trigonometry in the upper grades and to omit the consideration of important social and economic relationships in which number functions in the lives of most people. It happens that the reviewer is in hearty agreement with this point of view. There are many who will not accept such a point of view because of their belief in a much more technical mathematical treatment. Certainly there are many pupils who should learn the essentials of taxation, investment, and the arithmetic of the consumer, who should acquire an appreciation of the affairs of business, and who should develop the capacity to think intelligently by viewing the quantitative aspects of important social institutions instead of spending their time on abstract and pure mathematics.

In chapter ix the author outlines what to teach in each grade. This chapter is a restatement of a similar discussion in the first volume. It contains some important variations from current practices, such as the introduction of percentage in Grade V, which are in accordance with the author's belief that decimals are simpler than fractions and that therefore decimals and some of their applications in percentage may be taught before difficult processes in unlike fractions are presented. The lists of "cues" to be taught in each grade are included in the outlines to form the basis of "mastery of the language of arithmetic." The changes in the treatment of fractions and decimals and the lists of cues represent the important deviations from conventional courses of study. The proposed content therefore has the same possible defect that is pointed out by those who question the present organization of the course in arithmetic on account of its formalism and the failure to consider the ways in which the subject can contribute effec-

tively to "richer and fuller living" by the pupils. Those who believe that there should be a complete reorganization and rebuilding of the present curriculum will question the validity of the proposed outline of subject matter.

Professor Osburn states in the Preface that he has made no attempt to discuss other available researches of the nature of pupil errors or the types of remedial exercises that experiments have shown result in improvement in problem-solving. There are a few references to pertinent publications in the footnotes, but there are no selected bibliographies on the issues being considered. The book is therefore largely a statement of Professor Osburn's theories on some of the crucial problems in arithmetic instruction, and his recommended changes are not supported by evidence of any kind that the desired results would be produced if his recommendations were accepted.

The volume is an interesting contribution to the growing literature on instruction in arithmetic. The discussions of the curriculum, especially those in which proposed changes are outlined and defended, should be read by all supervisors and teachers of arithmetic. The method of analyzing steps in solving examples in fractions should be carefully studied.

LEO J. BRUECKNER

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The library in the elementary school.—Those interested in the development of the elementary-school library as an agency supplementary to the classroom will welcome the first book[1] to deal exclusively with this field. The Preface states the author's purpose as follows:

> A thorough consideration of modern educational objectives and of the nature and aspects of the learning processes places a premium on that agency which provides an attractive environment, abundant reading materials, stimulating social contacts, and facilitates a wholesome interrelation of all departments of the school. The purpose of this book is to show how the elementary-school library functions effectively in all these ways.
>
> Vital problems of organization, administration, and guidance are given definite, specific treatment. The following partial list of topics suggests to some extent the range and nature of the contents of this volume: major objectives of the elementary-school library; library, the heart of the school; pupil activities in the library; location, furniture, and equipment; qualifications of the teacher-librarian; co-operation with the public library; elementary-school programs including school library service; training in the intelligent use of the library; helpful, varied lists of children's books and magazines; reading guidance; and measuring the efficiency of an elementary-school library [pp. vii–viii].

The author seems to have accomplished his declared purpose within certain limits.

The special attention given to reading-library departments in platoon schools and the emphasis on objectives of reading tend more to confuse than to define

[1] William A. King, *The Elementary School Library*. New York: Charles Scribner's Sons, 1929. Pp. xiv+224.

the functions of the elementary-school librarian and the functions of the teacher of reading. The time given to the guidance of reading in the specimen outlines shown might well prevent the librarian from bringing about "a wholesome interrelation of all departments of the school" except through the reading done by pupils. How the librarian can find time both to teach the mechanics of reading and to make available to the teachers of various subjects the materials needed to integrate and co-ordinate the curriculum is not made sufficiently clear. The effective selection of materials is, after all, the librarian's main job. The librarian is presumably better qualified to render this service than is the teacher.

Again, if the teacher-librarian attempts to direct pupils extensively in the mechanics of reading, there is likely to be a falling-off in the duties related to the maintenance of efficient library routine. The practice cited of having books classified and catalogued by a central school library or by the public library aids in the solution of this problem. Yet even under such an arrangement there is a considerable amount of routine work which must be done in the school library itself.

Until more experimental evidence accumulates, it is not possible to say that the librarian can do and be what the author recommends. It is perfectly obvious, however, that the recommendations are sound and should be put into effect if the school can supply the additional clerical help and find a properly qualified librarian.

The book contributes many helpful aids in convenient form—for example, several specimen platoon-school schedules whereby the library is made accessible to all pupils or to all those old enough to use it profitably, examples and lists of pupils' library activities, illustrations of proper equipment and arrangement, a graded course of study in library training for elementary-school pupils, specimen book lists, and a chart for measuring library efficiency.

These aids alone should make the book useful to superintendents, principals, supervisors, school librarians, and classroom teachers. The book as a whole is an emphatic illustration of the need for systematic studies of school-library procedure with reference to specified objectives. Most of the recommendations are based on the author's personal experience and should accordingly be checked by the experience of others. The book is important to students of the school librarianship as a collection of assumptions which need to be investigated with reference to school libraries of all types and also as an indication of the need for valid criteria for school library service.

ELSIE SHUMAN

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Practical techniques for teachers.—One commonly hears the statement that books on education dispense significant principles but that many teachers have difficulty in seeing the relation between these principles and their own practices. Professor A. R. Palmer has attempted to appeal directly to teachers by prepar-

ing a book[1] which is full of concrete examples of progressive practices relating to the various subjects of the curriculum. In the words of the author, "it is the purpose of this book to help teachers direct the learning activities of their pupils through the use of progressive practices applicable anywhere under present conditions" (p. vii).

The first four chapters of the book deal with the general position which underlies the remaining chapters. The author analyzes learning into three types: (1) ability to do or the tendency to respond in the same manner to a similar situation, (2) understanding or the tendency to transform the meaning of a situation, and (3) personal acceptance of the worth and value of a situation. These three types of learning are explained in considerable detail, and numerous examples are given. However, the analysis of learning into these three types is in many respects illogical, and the illustrations which are given make it clear that the three types overlap to a considerable extent. Furthermore, any one of the types can be analyzed into still more fundamental types. The contribution of the first four chapters seems to be small, but the value of the book as a whole is little affected by the introductory analysis of learning.

The main part of the book, from chapter v to chapter xiii, deals with such topics as the following: individualizing learning activities; focusing the attention of the pupil; increasing the ease of learning; using visual materials; testing, which includes the diagnosis of pupils' difficulties by both group and individual techniques; and motivating learning through progress charts of various kinds. Under each of the topics one finds specific illustrations from the literature covering concrete bodies of subject matter. These concrete illustrations are occasionally so brief that, unless a teacher has some background relating to the subject, she will doubtless get little from them. However, in many cases the illustrations will undoubtedly be very useful to teachers and will serve to make clear some of the principles of education which may be difficult to apply when they are presented abstractly.

The author gives little evidence in support of the methods of procedure which he presents, but he shows large confidence in the techniques which he recommends. For example, he states:

> Too long has instruction been organized in terms of subjects of study such as spelling, history, geography, or arithmetic. Such an organization does not give the proper articulation with life. A newer and much better procedure is for the teacher to break down the subject walls and in their stead set up large units of work out of which come ways of behaving that evidence integration of the child's personality. These learning products should not be thought of in terms of amount of work to be done or amount of time required but should be (1) changes in the pupil's ability to do things, (2) changes in his understanding of things, and (3) changes in his personal acceptance of the worth and value of things [p. 17].

[1] Anthony Ray Palmer, *Progressive Practices in Directing Learning*. New York: Macmillan Co., 1929. Pp. xviii+300.

While the preceding statement may be accepted as an interesting hypothesis, it is at present no more than this, and one doubts whether an author is justified in presenting it with such assurance.

The general position of the author is illustrated rather well in the following paragraph from the first chapter.

> The function of the teacher and the function of the pupil are separate and distinct yet closely related and interwoven. The function of the teacher is to set up desirable learning products as new ways of behaving and to provide and direct learning activities that will produce each learning product. The function of the pupil is to engage in those learning activities that will enable him to attain the desired learning products. The learning product is the way of behaving; the learning activity provides opportunity for practice in it. Hence the learning activities should always be focused directly upon the learning product [p. 2].

The book will undoubtedly be stimulating to many teachers in service who want devices and specific techniques but do not care for a critical evaluation of these techniques. For such teachers the book contains an abundance of material.

G. T. BUSWELL

A study relating to the nature of intelligence.—Intelligence is commonly defined as the ability to adapt one's self to new situations. A Canadian professor, Sam R. Laycock, questions this definition and presents a body of experimental data[1] to support his point of view. Professor Laycock introduces his study by calling attention to the wide variation in the use of the phrase "adaptability to new situations." On pages 13–16 he presents a number of illustrations of variations in the colloquial use of this phrase, and on pages 16–17 he shows how the literary use of the phrase varies. His conclusion is that the wide variation in the common use of the phrase greatly reduces its value as a description of the nature of intelligence. However, he goes farther than this and presents a large body of experimental evidence to show that the phrase "adaptability to new situations" is not acceptable as a definition of intelligence even in the limited sense in which it is frequently loosely employed.

Professor Laycock has classified situations into three major divisions: (1) those chiefly psychological in character, (2) those spatial in character, and (3) those that are mixed psychological and spatial. He devised a series of three new tests to measure intelligence in these three types of situations. The tests were given to 2,630 children eleven and twelve years of age, and the results have been analyzed in great detail to show the relation between the way children think and intelligence defined as adaptability to new situations.

Professor Laycock supplemented his formal tests of the children by personal interviews with two thousand of them. He concludes that "intelligence is not coincident with the sum total of all the cognitive processes, and the six processes

[1] Sam R. Laycock, *Adaptability to New Situations*. Baltimore: Warwick & York, Inc., 1929. Pp. xii+170. $2.40.

of Spearman seem to account for all items new and old that appear in the cognitive field. Certainly few would claim that pure retentivity, which is at the basis of reproduction, has any prominent place in a definition of intelligence. Then, too, if intelligence is to be synonymous with cognition, it covers such a wide area that its meaning is entirely lost. We would discover the treasure only to give it up again" (p. 158).

The findings with respect to the methods which were employed by the pupils in adapting themselves to new situations are particularly interesting. These methods may be classified as follows:

Almost pure reproduction.—Illustrated by many answers of the Burglar and Cyrus Tests.

Reproduction followed by eduction to test the solution.—This often eliminated the more gross errors and led to varying degrees of accuracy in solution. This method was often but not always contingent upon an explorative process within a limited field (e.g., sieges). The relative amount of reproduction and eduction within this method varied very greatly.

Eduction followed by reproduction.—Here the pupil educed relations from the situation itself and used reproduction to fill out the correlate. The relative amounts of each process again varied.

Almost pure eduction.—This occurred, but the writer is of the opinion that in the experiments of this investigation it was by no means common [pp. 157–58].

The monograph is well worth careful reading by any student of mental tests. It makes an important contribution to the psychological definition of the nature of intelligence. The monograph is also commendable from the standpoint of its contribution to the analysis of test results. The detailed description of the formulation and administration of the Cyrus Test shows a considerable degree of cleverness on the part of the author. The book is well written but contains a number of English phrases which may not be familiar to some American readers. Furthermore, the place of "W" in adaptability to new situations (p. 18) will hardly be made clear to American readers by simply referring them to the work of Webb, which appeared in 1915 but is not commonly known by American students. The symbol "G" has become well known to American readers through the writings of Professor Spearman, but "W" is certainly not as well known. The monograph ends with a discussion of the pedagogical implications of the experimental data.

G. T. BUSWELL

Objective measurements of conduct.—A new volume has appeared in the series sponsored jointly by the Character Education Inquiry of Teachers College, Columbia University, and the Institute of Social and Religious Research. A companion volume to *Studies in Deceit*, the new book[1] presents the results of researches carried on to ascertain the nature of character and to discover the

[1] Hugh Hartshorne, Mark A. May, and Julius B. Maller, *Studies in Service and Self-Control.* Studies in the Nature of Character, II. New York: Macmillan Co., 1929. Pp. xxiv+560. $2.75.

possibility of education in specific traits of character. The authors have devised and administered a series of objective tests which purport to measure conduct trends in specific situations.

The authors endeavor to isolate certain elements of service, such as unselfishness and helpfulness, in five specific situations and to measure their prevalence in the conduct patterns of varying groups of children. In three tests the factor of loyalty to the pupil's class group is involved. In two tests the primary factor is the individual pupil's direct contribution to charitable enterprises. For example, in the Money Voting Test, the children, anticipating the winning of a money prize by their class group, are asked to indicate the order of their preferences for the five following possibilities: "Give all the money to the boy or girl scoring highest in the test. Buy something for our school. . . . . Buy something for the room. . . . . Divide the money equally among the members of the class. Buy something for some hospital child" (p. 56). Similarly, the several tests place concrete behavior situations before the subjects. Batteries of tests were arranged to measure the children's reputation for service.

To be noted in the test cited is the fact that pupils are called on to exercise only intellectual choices. With this vital limitation in mind, the investigators organized other situations in which the individual or the group actually has the money to distribute or has possessions usually prized by children to dispose of in one of several ways. Tests of this order were administered in three school populations designated X, Y, and Z. The first was a favored community; the second, an average community; and the third, an unfavored community.

The findings with respect to service (co-operation) are somewhat disconcerting: (1) No consistent differences were found between the school grades. (2) In general, retarded children are less co-operative, but the difference between retarded pupils and accelerated pupils is slight. (3) Little correlation exists between service and intelligence. (4) Little correlation exists between school deportment and service. (5) Girls are slightly more co-operative than boys. (6) The children from the average school community are the most co-operative. (7) No significant correlation exists between nationality and co-operation. (8) School attendance, Sunday-school attendance, and club membership are at best very minor factors in creating conducts that may be called co-operative.

Like the first part of the book, the second part, "Studies in Self-Control," presents measuring instruments, pupil subjects in varying school populations, results, and interpretations. Self-control is appraised by tests which determine the subject's "persistence" and "inhibition," that is, the degree to which he persists in such an act as keeping at a difficult task and the degree to which he refrains from making a suggested response in a situation which involves the vital element of self-restraint.

Again the data yield conclusions on the part of the investigators which are disconcerting if true. Influences which tradition has assumed to be very potent factors in building character are here represented as being quite impotent. School status, intelligence, physical condition, general environment, the home,

the school, and club membership do not show sufficient correlation with self-control as measured by "persistence" and "inhibition" to justify any high degree of optimism on the part of educators.

Professors Hartshorne and May are far too expert workers in the difficult field of measurement to draw inferences unwarranted by their evidence. All through their discussion they are scrupulously careful to avoid sweeping generalizations. Apparently, however, they are wholly committed to the theory of specificity, which holds that transfer of learning can take place only when the potent factors of one situation are well-nigh, if not perfectly, duplicated by potent factors in another situation. This theory of specificity is, of course, opposed by many psychologists who maintain that out of many experiences of similar but not identical factors eventuate generalized ideas, ideals, and even conducts. Without dwelling on this apparent predisposition in favor of one psychological hypothesis which is often disputed, we may sum up the disquieting conclusions, and thereby call attention to the stimulating challenge of the book, in these words of the authors: "What they [American childhood] are at present learning of self-control, as also of service and honesty, is largely a matter of accident" (p. 453). The investigators themselves appear to think that theirs is not a counsel of despair, but, if the later studies of these men or of other investigators corroborate their findings and establish their tentative inferences as sound generalizations, our whole program of character education will have to be made over on an entirely new pattern.

R. L. LYMAN

A survey of children's behavior and attitudes with reference to motion pictures.—A very readable account[1] of a questionnaire study of the experiences of 10,052 children with motion pictures has been prepared by Alice Miller Mitchell. The questions were of two types: (1) those dealing with such matters as frequency of attendance, time of attendance, companions, money spent, and means of obtaining it; and (2) those dealing with likes and dislikes in motion pictures and preferences for motion-picture exhibitions in comparison with other types of recreation. The children were all from Chicago. They were selected so as to facilitate comparisons between younger and older children, between boys and girls, and between three types of social groups—boy and girl scouts, "average" public-school children, and boy and girl delinquents.

The study shows conclusively that attendance at motion-picture exhibitions is a regular experience with the vast majority of city children. Moreover, it is commonly looked upon by the children themselves as a natural privilege. This statement is true for all groups of children. However, the motion picture occupies a more prominent place in the life of the delinquent child than in the life of the normal child. This fact is not interpreted to mean necessarily that motion pictures cause delinquency. It indicates, however, that motion pictures

[1] Alice Miller Mitchell, *Children and Movies*. Chicago: University of Chicago Press, 1929. Pp. xxiv+182. $2.00.

constitute the sole resource of children for whom more active types of recreation are not provided. There is also a contrast between the three groups, particularly the delinquents and the scouts, in the preferences expressed for motion-picture exhibitions and for other types of recreation.

In a number of important respects the study brings out the inadequacy of motion-picture exhibitions as at present constituted to serve as wholesome means of recreation for the wide range of ages and types of persons who attend them indiscriminatingly. The investigation reveals the need of more analytical study of the situation in order that constructive measures may be devised to improve motion-picture exhibitions as means of recreation and education.

FRANK N. FREEMAN

Conference on professional training of teachers.—Problems in Teacher Training, Volume IV,[1] which comprises the proceedings of the 1929 spring conference conducted by the Normal-School and Teachers-College Section of the New York Society for the Experimental Study of Education, should be in the hands of every student of teacher preparation. This volume is organized around five major topics: (1) "Co-operation in Attracting, Selecting, and Training a Professional Staff for the Teaching Service"; (2) "Co-operation in Setting Up Policies and in Administering Programs of Service in a State System of Teacher-Training Institutions"; (3) "The Teachers-College Program of Education in the Effective Use of English, a Student-Faculty Co-operative Enterprise"; (4) "The Teachers-College Program of Education in Health, a Student-Faculty Co-operative Enterprise"; (5) "Student Co-operation with Each Other and with the Faculty and Administrative Officers in Teacher-Training Institutions."

The chairman of the conference and his associates took great care in subdividing these topics and in selecting competent speakers. The papers printed are in marked contrast to the usual convention reports in that they are comparatively brief. The policy of having a large number of papers in brief form compelled the speakers to condense their thoughts. The result is a report of 356 pages, which is unique with regard to both form and amount of valuable content.

NED H. DEARBORN

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Two outstanding readers.—In the continuous flow of new books for children publications of exceptional merit occasionally emerge. Two such books have recently appeared, one for the primary grades and one for the middle grades.

A. A. Milne has combined into a reader[2] for young children stories and poems

[1] *Problems in Teacher Training*, Volume IV. Proceedings of the 1929 Spring Conference Conducted by the Normal-School and Teachers-College Section of the New York Society for the Experimental Study of Education. Compiled and edited by Ambrose L. Suhrie. New York: New York University Press Book Store. Pp. xiv+356.

[2] A. A. Milne, *The Christopher Robin Reader*. New York: E. P. Dutton & Co., Inc., 1929. Pp. xiv+172. $1.25.

selected from four of his well-known books—*When We Were Very Young, Now We Are Six, Winnie-the-Pooh,* and *The House at Pooh Corner.* One will search far to find as attractive stories as these. They will undoubtedly become classic. The abundant illustrations in black and white are of the same order of merit as the selections. The book illustrates the possibility of writing good literature at the level of the primary grades. It is in decided contrast to much of the insipid material found in primary readers. It illustrates further the desirability of enlisting literary artists in the preparation of reading materials for the schools.

Another book,[1] published by the Oxford University Press, demonstrates that literary merit may be combined with scientific description. The author has woven a large amount of accurate information concerning airplanes into a fascinating story. The book contains fifteen chapters devoted to such topics as "Aviation Stories," "The Balloon Age," "Gliders," and "Aviation Today." While the entire history of flying is covered, stress is laid on the achievements of the present generation. The book is illustrated with black-and-white drawings and full-page color plates. It will be both an attractive and a worth-while addition to the reading table of any middle-grade classroom.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

BAGSTER-COLLINS, E. W., and OTHERS. *Studies in Modern Language Teaching.* Publications of the American and Canadian Committees on Modern Languages, Volume Seventeen. New York: Macmillan Co., 1930. Pp. xxxii+492.

BLACKSTONE, E. G. *Research Studies in Commercial Education, IV.* University of Iowa Monographs in Education, First Series, No. 11. Iowa City, Iowa: University of Iowa, 1929. Pp. 240. $0.75.

BREED, FREDERICK S. *How To Teach Spelling.* Dansville, New York: F. A. Owen Publishing Co., 1930. Pp. viii+178. $1.25.

BRIGGS, THOMAS H. *The Great Investment: Secondary Education in a Democracy.* The Inglis Lecture, 1930. Cambridge, Massachusetts: Harvard University Press, 1930. Pp. x+144. $1.50.

CLARKE, F. *Foundations of History-Teaching:* A Critique for Teachers. New York: Oxford University Press, 1929. Pp. vi+172. $1.50.

Current Problems of Supervisors. Third Yearbook of the Department of Supervisors and Directors of Instruction of the National Education Association. New York: Teachers College, Columbia University, 1930. Pp. viii+252.

DIEMER, GEORGE W., and MULLEN, BLANCHE V. *Pupil Citizenship.* Yonkers-on-Hudson, New York: World Book Co., 1930. Pp. xii+340. $2.16.

[1] J. W. Iseman and Sloan Taylor, *The Book of Airplanes.* New York: Oxford University Press, 1929. Pp. viii+134. $1.00.

EVANS, EVAN E., and HALLMAN, MALCOLM SCOTT. *Home Rooms: Organization, Administration and Activities.* New York: A. S. Barnes & Co., 1930. Pp. xii+154. $1.00.

HERTZLER, SILAS. *The Rise of the Public High School in Connecticut.* University Research Monographs, Number 10. Baltimore: Warwick & York, Inc., 1930. Pp. xx+258. $2.87.

JOHNSTON, EDGAR G. *Point Systems and Awards.* New York: A. S. Barnes & Co., 1930. Pp. xvi+160. $1.00.

MILLARD, CECIL V. *The Organization and Administration of Extra Curricular Activities.* New York: A. S. Barnes & Co., 1930. Pp. xiv+146. $1.00.

MORRISON, HENRY C. *School Revenue.* Chicago: University of Chicago Press, 1930. Pp. x+242. $2.50.

Problems in Teacher Training, Volume IV. Proceedings of the 1929 Spring Conference Conducted by the Normal-School and Teachers-College Section of the New York Society for the Experimental Study of Education. Compiled and edited by Ambrose L. Suhrie. New York: New York University Press Book Store. Pp. xiv+356.

Quantitative Measurement in Institutions of Higher Learning. Yearbook Number XVIII of the National Society of College Teachers of Education. Edited by Stuart Appleton Courtis. Chicago: University of Chicago Press, 1930. Pp. x+254. $1.50.

REAVIS, WILLIAM C., and WOELLNER, ROBERT C. *Office Practices in Secondary Schools.* Chicago: Laidlaw Bros., 1930. Pp. 240. $2.00.

RESEARCH COUNCIL OF THE MUSIC SUPERVISORS NATIONAL CONFERENCE IN CO-OPERATION WITH THE NATIONAL BUREAU FOR THE ADVANCEMENT OF MUSIC. *Survey of College Entrance Credits and College Courses in Music.* New York: National Bureau for the Advancement of Music, 1930. Pp. 210. $2.00.

The Teaching of Geometry. Fifth Yearbook of the National Council of Teachers of Mathematics. New York: Teachers College, Columbia University, 1930. Pp. x+206.

WAGNER, M. CHANNING. *Assembly Programs.* New York: A. S. Barnes & Co., 1930. Pp. xii+142. $1.00.

WEBER, OSCAR F. *How We Become Moral:* A Comment on Public Education. Boston: Richard G. Badger, Publisher, 1930. Pp. 234. $2.00.

WELLS, GEO. C., and MCCALISTER, WAYDE H. *Student Publications.* New York: A. S. Barnes & Co., 1930. Pp. x+180. $1.00.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

BRANOM, M. E. *The Branom Practice Tests in Advanced Geography*, Series Two. New York: Macmillan Co., 1929. Pp. 222. $0.68.

CARPENTER, FRANK G. *How the World Is Clothed.* Chicago: American Book Co., 1929. Pp. 352. $0.96.

CARPENTER, FRANK G. *How the World Is Housed.* Chicago: American Book Co., 1930. Pp. 382. $0.96.

CLARK, JOHN R., OTIS, ARTHUR S., and HATTON, CAROLINE. *Modern-School Arithmetic,* Book Three. Yonkers-on-Hudson, New York: World Book Co., 1930. Pp. xiv+402. $0.88.

FISHBACK, ELVIN H. *Character Building for Junior-High-School Grades.* Boston: D. C. Heath & Co., 1930. Pp. viii+232. $1.00.

GRAY, CLARENCE TRUMAN. *The Workaday Readers:* A Fourth Reader, pp. vi+198, $0.64; A Fifth Reader, pp. vi+238, $0.68; A Sixth Reader, pp. vi+250, $0.72; The Teachers' Manual for the Fourth Reader, pp. vi+42, $0.15; The Teachers' Manual for the Fifth Reader, pp. vi+36, $0.15; The Teachers' Manual for the Sixth Reader, pp. vi+38, $0.15. Boston: D. C. Heath & Co., 1929.

KIRBY, THOMAS J., CARPENTER, MILLINGTON F., and KNOTT, THOMAS A. *Pupil Activity English Series,* Book Seven. New York: Harcourt, Brace & Co., 1930. Pp. xii+314. $1.08.

KYTE, GEORGE C. *Modern Methods Speller.* Newark, New Jersey: Silver, Burdett & Co., 1930. Pp. xxxii+92. $0.56.

LEVIS, ELLA CANNON. *Better Citizenship:* A Textbook in Community Civics. New York: Harcourt, Brace & Co., 1930. Pp. xxvi+536. $1.72.

MARSHALL, THOMAS M. *American History.* New York: Macmillan Co., 1930. Pp. xiv+748. $1.60.

NIDA, WILLIAM L., and HOLMES, TRACY H. *The Ladder of Life.* Science Readers, Book VII. Boston: D. C. Heath & Co., 1930. Pp. vi+272. $0.96.

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PERSING, ELLIS C., and PEEPLES, ELIZABETH K. *Elementary Science by Grades,* Book One. New York: D. Appleton & Co., 1930. Pp. 128. $0.72.

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ALMACK, JOHN C. *Research and Thesis Writing.* Boston: Houghton Mifflin Co., 1930. Pp. xviii+310. $2.40.

COLLINGS, ELLSWORTH, and WILSON, MILBOURNE O. *Psychology for Teachers:* Purposive Behavior, the Foundation of Learning. New York: Charles Scribner's Sons, 1930. Pp. xviii+474. $2.00.

DIXON, C. MADELEINE. *Children Are Like That.* New York: John Day Co., 1930. Pp. xiv+206. $2.50.

STRANG, RUTH. *An Introduction to Child Study.* New York: Macmillan Co., 1930. Pp. xiv+550. $2.75.